

# Relative Contributions of the Insurance Industry to the Growth of the Nigerian Economy

Ntiedo J. Umoren\*, Emem Matthew Joseph\*

Department of Insurance, Faculty of Business Administration, University of Uyo,  
Uyo, Nigeria

## Abstract—

**T**his study investigates empirically the relative contributions of the insurance industry to the growth of the Nigerian economy. The study covers the period from 1970 to 2012. The secondary data collected for the study were presented in table and graph. A multiple linear regression method was adopted to test the research hypothesis. An ex-post facto research design was adopted in the study. The discoveries were that insurance sector growth has contributed significantly to the economic growth in Nigeria within the period of the study. Premium income of insurance industry has a positive influence on GDP but behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria within the period under study. Also, claims expenditure has a negative influence on GDP growth in Nigeria. The importance of insurance is growing due to the increasing share of the insurance sector in the aggregate financial sector in almost every developing country with Nigeria inclusive as well as their contribution to economic growth and development. It was recommended that Insurance premium income generated should be reinvested into the Nigerian economy in order to enhance long run economic growth and development. Claims manager can also be trained in claims reporting process like, minimization of losses, investigation, verification of claims, loss evaluation and assessing the extent of the damage prior to any repair or replacement. This will help reduce the frequency of claims reports and boost premium income for economic development and growth.

**Keywords—** Insurance sector GDP, Insurance premium, claims expenditure, insurance investment, economic growth, Nigeria.

## I. INTRODUCTION

Insurance hinges on the concept of risk and risk is presence in every activities of human life. Risk is inseparable from insurance because without the existence of risk, insurance cannot survive. Insurance is in the business for other businesses to survive. Behind the need to have risk cover, the insured agrees to pay premium to the insurer. Depending on the length and breadth of the insurance market, premium savings become a large chunk of capital formation that raises the volume of credit in the economy and facilitates financial intermediation. Insurance industry thus become a veritable sub-sector for financial intermediation when the operators in the industry use premium income collected from the policyholders to extend loans to deficit economic units like government, corporate organizations and other sundry borrowers with interest payment at maturity. Also, these institutions float securities which insurance firms buy with the premiums collected. They, in turn, earn interests and dividends from the securities. These activities therefore enhance the growth of insurance subsector contribution to Gross Domestic Product (GDP) as well as the growth of Nigerian economy.

Insurance is a social scheme which provides financial compensation for the effects of a misfortune [1]. Reference [2] sees insurance as a social device for minimizing risk of uncertainty regarding loss by spreading the risk over a large enough number of similar exposures to predict the individual chance of loss that provides compensation for specific losses in exchange for a periodic payment called premium. According to [3], non-life or general insurance deals with insurance of properties other than life where the benefit goes to the insurance holder. In contrast to the general or non-life insurance considered to be predominantly short term, the long-term insurance otherwise known as life insurance business according to [4] is associated with risks relating to life expectancy and having longer period of maturity. Four main types of life long term insurance policy exist. They include whole life assurance, term assurance, endowment assurance and annuity.

According to [5] Section 2(1-3), there are basically two main classes of insurance business namely; (a) life insurance business; and (b) general or non-life insurance business. In the case of life insurance, there are three categories- (a) individual life insurance business; (b) group life insurance and pension business; and (c) health insurance business. In the case of general or non-life insurance, it is divided into eight categories- (a) fire insurance business; (b) general accident insurance business; (c) motor vehicle insurance business; (d) marine and aviation insurance business; (e) oil and gas insurance business; (f) engineering insurance business; (g) bonds credit guarantee and suretyship insurance business; and (h) miscellaneous insurance business.

In 1921, since the coming into existence of insurance industry in Nigeria and the subsequent establishment of Royal Exchange Assurance Company, the industry has not been without some problems. Even after the 1977 Indigenization Decree forced foreign firms to cede controlling equity stake in all insurance firms operating in Nigeria, the industry felt

into turbulent times, particularly from the early 90s [6]. Reference [7] added that despite the importance of insurance, it has not been accorded the patronage it deserves. A number of factors according to him have been blamed for the low patronage; they include; concentration of insurance in the cities whereas most Nigerians live in the rural areas; poor process of indemnification (claims payment) which is intermingled with prolonged foot dragging and legal tussles.

According to [8], the Federal Government of Nigeria in September, 2005 announced new minimum share capital requirements for companies operating in the insurance industry. Specifically, the minimum capital base of non-life insurance firms was increased from ₦200 million to ₦3 billion, which were effective from 28 February, 2007 and represents 1,400% increase while life insurance minimum capital base was increased from ₦150 million to ₦2 billion representing 1,233% [1].

Before this reform, [9] stated that the insurance industry in Nigeria experienced turbulent times as a result of the following factors: undercapitalization of most insurance companies in the country; poor labour product mix/pricing strategy; grossly inefficient service delivery channels; low integrity of many insurance firms; low insurance awareness among Nigerians and poor labour practices. Other factors include; poor information technology infrastructure; poor regulatory mechanism and poor enforcement mechanism. According to the author, the above problems have dogged the insurance industry over the years and though we have observed a rapid growth in the number of operations, this has not conferred the envisaged incremental strengths on the industry largely as a result of the above problems. After the recapitalization exercise in 2007, [10] stated that beside corporate bodies that provide insurance cover for their staff, Nigerians are yet to fully embrace insurance services. This has over the years made the operations of the insurance companies in Nigeria not having much contribution to the gross domestic product comparable to other institutions like banks and the stock market.

From the foregoing, we can say that the problems confronting insurance industry in Nigeria include; ethical issue, poor premium collection, poor claims settlement process, solvency problem, lack of investible assets, lack of standard, poor attitude of government, poor management, low level of information technology, lack of integrity and trust, attitude of Nigerians towards insurance, lack of innovation, poor interest rate, high inflation rate, cash flow problem, poor efforts of research to investment practice and portfolio, low level of insurance awareness, poor market penetration, low operating capital, low capacity for retention and acceptance of foreign risks among others [11];[1]. However, all these problems negatively affect the insurance sector contribution to GDP, premium income, other income, claims expenditure, other expenditure and the growth of Nigerian economy thereby leading to abysmal contributions to economic growth.

A review of existing literature, theoretical studies and empirical evidence have shown that countries with better developed financial system enjoy faster and more stable long-run growth of which insurance firms contribute to. However, the results of the empirical researches carried out up to date are mixed [11]. Extant literature however, reveals that the studies in this area are mostly conducted in more developed economies and few in Nigeria with inconsistent findings focusing more on all classes of insurance. Hence, there is need to conduct this study in Nigeria, in order to determine its contribution to economic growth in Nigeria.

The main objective of this study is to examine the relative contributions of insurance industry to the growth of Nigerian economy. Other specific objective of the study is to determine the relationship existing between insurance sector contribution to GDP, premium income, other income, claims expenditure, other expenditure, total investment and the growth of Nigerian economy. To achieve the above objectives, the following research hypothesis is formulated in null form;

$H_0$ : There is no significant relationship between insurance sector contribution to GDP, premium income, other income, claims expenditure, other expenditure, total investment and the growth of Nigerian economy.

This paper is organized into five headings; introduction, literature review, research methodology, data presentation, analysis, empirical results and discussion of findings followed by conclusion and recommendation.

## II. LITERATURE REVIEW

### A. Conceptual Review

Insurance is a method of protecting people from financial loss. Protection is accomplished by the transfer of the chance of loss from the individual to the group to which he or she belongs. A small amount of money called premium is collected from each member of the group and is then used to pay those members who suffer financial loss [12]. According to [13], insurance is defined as a contract whereby one party, called the insurer, agrees in consideration of the money paid to him called, the premium, by another person or party known as the insured, to indemnify him (the insured) against any loss resulting to him on the happening of certain events, or to pay a certain specified sum of money on the happening of the specified event or events. Reference [14] opines that insurance acts as a stimulus for the activity of businesses that are already in existence. This is done through the release of funds for investment in the productive side of the business, which would otherwise have to be held in easily accessible reserves to cover any future loss. From the researcher point of view, insurance is a risk transfer mechanism, by which an individual, organization and government can exchange their uncertainty for certainty. The uncertainty experienced would include whether a loss will occur, when it will take place, how severe it will be and how many there might be in a year. This uncertainty makes it very difficult to budget and so those involved seek ways of controlling the financial effect of the risk. Insurance offers the opportunity to exchange this uncertain loss for a certain loss; the insurance premium. Reference [15] stated that the function of providing insurance coverage could affect economic growth through saving rate channel in a mixed way.

Insurance premium is the payment made by insureds to insurer [16]. The amount of money an insurance companies charge for insurance coverage, which represents the cost of insurance is known as premium. Therefore, premium income

is the revenue that insurance companies receive from insurance and annuity policy sales [2]. Furthermore, insurance claim is a demand made by the insured or the insured's beneficiary for payment of the benefits as provided by the policy, written request by an insured for the insurance company to cover an incurred loss, usually submitted on the company standard form. Claim expense is the expense of adjusting a claim, such as investigation and attorney's fees. It does not include the cost of the claim itself. Claim settlement is a lump-sum payment by an insurer to a claimant in exchange for the claimant's agreement to release the insurer from further responsibility for coverage under the policy. Investment is any expenditure of money or assets made in an attempt to earn a profit of some type. Insurance investment income is the return received by insurers from their investment portfolios including interest, dividends and realized capital gains on stocks.

## **B. Theoretical Framework**

1) *Co-operation Theory*: This theory was propounded by [17]. According to him, insurance is a co-operative device. This theory states that if one person is providing for his own losses, it cannot be strictly an insurance because in insurance, the loss is shared by a group of persons who are willing to co-operate. Today, according to this theory, all the insured give a premium to join the scheme of insurance. Thus, the insured are cooperating to share the loss of an individual by payment of a premium in advance [17]. This theory is related to the study because it is the accumulated premiums that the insurance companies can invest to boost economic growth, an objective which this study seeks to achieve.

2) *Finance-Growth Nexus Theory*: This study is based on the finance-growth nexus theory by [18]. Borrowing from [18], financial services are important for economic growth as long as they improve productivity by promoting technological innovation and helping entrepreneurs with the best chances of success in the innovation process. He argued that mobilization of productive savings, efficient resources allocation, re-investment of mobilized financial resources into the economy would facilitate economic growth. He further stressed that these effects could create a favorable macro-economic framework for strong economic growth. As a matter of fact, theoretical endogenous growth models which integrate financial development support this thesis [19], [20], [21]. This theory is related to this study because for economic growth to subsist insurance industry must mobilized the accumulated premium incomes and re-invest such funds into the economy, as well as prompt claims settlement to boost money supply and capital formation in the economy. Insurance firms are financial intermediaries that contribute significantly to economic growth of any economy.

3) *Insurance Risk Theory*: According to [22], the foundation of the modern risk theory goes back to the works of Filip Lundberg and Harald Cramér. The Poisson process was proposed by Filip Lundberg in 1903 as a simple process in solving the problem of the first passage time. In 1930 Harald Cramér extended the Lundberg's work for modeling the ruin of an insurance company as a first passage time problem. The basic model is called a Cramér - Lundberg model or classical risk model. This theory is adopted because risk is the focal point of insurance. Supporting this theory, [17] added that through this theory, the loss in the shape of premium can be distributed only on the basis of theory of risk and probability.

## **C. Empirical Literature Review**

Reference [23] studied the relationship between the insurance business and the economic growth of 23 OECD countries over the period 1990-2011, using a static panel data model. The key findings emerged from the empirical analysis show a positive impact of non-life insurance, as measured by the penetration rate on economic growth and a negative effect exerted by the total insurance and non-life insurance, as measured by the density on economic growth.

Reference [24] examined the dynamic relationship in the short and long term between economic growth and the development of the insurance sector. This study was conducted on a sample of nine OECD countries by performing a cointegration analysis for the period 1961-1996 by taking real GDP as a measure of economic activity and total premiums as a measure of the insurance business. The results show that the insurance has an impact on economic growth in some countries (Canada and Japan), and in other countries, the opposite is true. In addition, these results indicate that this relationship is specific to one country to another and depends on a number of circumstances such as the cultural, legal and regulatory environment and the impact of moral hazard in insurance.

Reference [25] studied the impact of insurance on economic growth, on a sample of 29 European countries. They conducted an analysis of panel data over the period 1992-2005, the total sample and then they split into two groups, one consisting of 15 EU countries and the other includes the new member states the EU (such as Turkey and Croatia). They found a positive impact of life insurance on the growth of GDP for the first group of countries, for the second group, they found a greater impact of the non-life insurance (liability insurance). In addition, their results highlight the impact of the real interest rate for the bond insurance growth.

Reference [26] studied the relationship between insurance development and economic growth using a dynamic panel data model on 77 countries for the period 1994-2005. The insurance density is used to measure the development of the insurance; they concluded that the development of insurance is positively correlated with economic growth.

Reference [27] examined the relationship between the size of the insurance market and economic growth in the UK over the period 1966 to 2003 for long-term insurance, and over the period 1971-2003 for general insurance. As a measure of growth, they used the growth rate of real GDP per capita and premiums (car insurance, liability insurance, property insurance, transport insurance) general insurance, insurance premiums in the long term (life insurance, annuities, pensions individuals) as a measure of the activity of insurance. Their study showed that there is a causal link between long-term growth of the insurance market and economic growth for eight of the nine classes of insurance.

Recent studies conducted in Nigeria revealed mix results. Reference [3] investigates separately the effects of life and non-life insurance on economic growth in Nigeria from 1976 to 2013. The Autoregressive Distributed Lags (ARDL) was adopted given the different order of integration of the variables of interest. After estimating a growth model, the bound test shows a long run relationship to exist among economic life, non-life insurance and economic growth in Nigeria over the period of study. The long run and the short run dynamics further confirms the positive and significant contribution of life and non-life insurance on economic growth in Nigeria. The author concluded that life and non-life insurance acts as complements to economic growth in Nigeria rather substitutes.

Reference [28] examine the impact of insurance contributions on economic growth in Nigeria over a twenty seven year period, between 1981 and 2008 using a dynamic factor model. The proposed technique describes a number of methods designed to analyze a functional but unobservable random quantities called factors. The factor loadings indicate which common trend is related to which set of time series. The result obtained shows a positive relationship between insurance contribution, measured the volume of premium and economic growth in Nigeria.

Reference [29] analyzed both the long and short run relationship between insurance development and economic growth in Nigeria over the period 1986 to 2010 using error correction model. The findings from the study reveal that insurance development cointegrated with economic growth in Nigeria. That is there is long run relationship between insurance development and economic growth in Nigeria. The results obtained indicate statistically significance contribution of insurance to economic growth in Nigeria. Reference [30] examined the causal relationship between insurance and economic growth in Nigeria over the period 1986 to 2010 using vector error correction model. The results revealed that insurance contributes to economic growth in Nigeria as they provide the necessary long-term fund for investment and absolving risks.

Reference [31] studied the nexus between economic growth and insurance business in Nigeria. The discovered that there is relationship between insurance business and economic growth within 1980 to 2011. Similarly, [11] examined the short and long-run relationships between economic growth and insurance sector development in the Nigerian economy. The findings revealed that insurance sector growth and development positively and significantly affects economic growth.

Reference [4] examined the link between investment portfolio of insurance firms and economic development in Nigeria. The findings revealed that insurance firms were not making any significant influence on economic development in Nigeria. Also, [10] empirically assesses insurance market activities in Nigeria with the view to determining its impact on economic growth from 1970 to 2008. The finding revealed that insurance sector did not revealed any positively and significant effect on economic growth in Nigeria within the period.

### **III. RESEARCH METHODOLOGY**

Research methodology is the plan, strategy and structure of investigation, concerned with how to obtain answers to question in consolidation of the nature and the purpose which it intended to achieve as well as the anticipated result. This section aimed at discussing the general research strategies used in this study. This research is a quantitative study aimed at examining the relative contributions of insurance industry to the growth of Nigerian economy. The study is purely quantitative and relies on secondary data.

#### **A. Research Design**

Research design is a framework for controlling the collection of data. It ensures that the required data are accurately collected. The structural framework of this study is based on ex-post facto research design. This research work therefore, is designed in a descriptive form. The ex-post factor design type will be used in this research work to analyse secondary data because there is no experiment involved, but rather is designed to test an event that has already taken place. Reference [32] noted that instead of taking groups that are equivalent and subjecting them to different treatments to determine differences in the dependent variables, an ex post facto research begins with variables that are already different in some respect and searches in retrospect for factors that brought about those differences. Reference [33] added that by identifying possible causes retrospectively, the researcher adopts an ex post facto approach to test the hypothesis. The researcher is thus examining, retrospectively, the effects of a naturally occurring event on a subsequent outcome with a view of establishing a causal link or relationship between them.

#### **B. Variables Identification**

The key variables used in this study covered both the insurance industry and economic growth in Nigeria from 1970 to 2012. The independents variables insurance sector contribution to GDP (INGDP), premium income (PREIN), other income (OTINC), claims expenditure (CLAEX), other expenditure (OTEXP), total investment of insurance firms (INVMT) while the dependent variable is gross domestic product (GDP at current basic prices) used in measuring the growth of Nigerian economy.

#### **C. Types and Sources of Data**

Generally, secondary data were used in this work. These data were time series and cross section. The data covered the period from 1970 to 2012. The data were sourced and extracted from existing document, which is the [34].

#### **D. Method of Data Analysis**

For this research work to be clear and useful, the data would be analyzed using appropriate techniques. Since the data for analysis is time series data, the technique of analysis adopted is multiple regression analysis. The time series is a set

of observations taken at specific time, usually at equal intervals. According to [35] time series is the arrangement of statistical data collected with respect to the time of occurrence. The data collated for this study will be presented in tables of time series. Simple percentages and graphs are used in analyzing the data.

In testing the research hypotheses, the multiple linear regression method will be used. The multiple regression analysis method is an analysis of association that simultaneously investigates the effects of two or more independent variables on a single interval scaled or ration-scaled dependent variable. These tools made it possible to carry out empirical analysis describing the trend movements of variables and their implications on economic development and growth in Nigeria. Thus, the tools used in the article were descriptive and inferential in nature. Specifically, the collated and extracted secondary time series data is presented in tabular form; simple percentages and graph are adopted in analyzing the data.

**E. Model Specification**

In this section, we adopt the multiple linear regression technique to specify the relationship between the variables in the hypothesis of the study. The multiple linear regression models are specified below:

$$Y = a_0 + a_1X_1 + a_2X_2 + \dots + a_nX_n + U_t$$

In the model,  $a_1, a_2, \dots, a_n$  are the parameters or the independent variables' coefficients and the  $u_t$  is the stochastic error term or random variable. The model above indicates that 'y' is a linear function of  $X_1, X_2, \dots, X_n$ . Hence,  $a_0$  is regression constant or intercept, while  $X_1, X_2, \dots, X_n$  are independent variables.

The functional equation for testing of hypothesis is stated below:

GDP = f(INGDP, PREIN, OTINC, CLAEX, OTEXP, INVMT). The equation is linearized in the hypothesis as:

$$GDP = a_0 + a_1INGDP + a_2PREIN + a_3OTINC + a_4CLAEX + a_5OTEXP + a_6INVMT + U_1$$

Where;

GDP = Gross Domestic Product.

INGDP = Insurance sector contribution to Gross Domestic Product

PREIN = Premium income of insurance industry

OTINC = Other income of the insurance industry

CLAEX = Claims expenditure of the insurance industry

OTEXP = Other expenditure of the insurance industry

INVMT= Total investment of the insurance industry

$U_1$  is the stochastic error term.

Appriori, the following are expected  $a_1 < 0$ ;  $a_2 < 0$ ,  $a_3 < 0$ ;  $a_4 < 0$ ;  $a_5 < 0$ ;  $a_6 < 0$  in the hypothesis.

Furthermore, the theoretical model specification of this study is stated below;

This study adopts Insurance Risk Theory model. Insurance Risk Theory model is a synonym of insurance mathematics.

The basic process of the general risk model according to [22] is given by

$X(t) = \Pi(t) - S(t)$ .....equation (1) and is called a risk process. Here  $\Pi(t)$  is the total amount of the premiums to the insurance company up to time t.  $S(t)$  is the accumulated sum of claims up to time t and X represent the insurance company. The risk reserve of the insurance company with initial capital 'u' is given by

$$U(t) = u + \Pi(t) - S(t), t \geq 0. \dots\dots\dots\text{equation (2)}$$

The stochastic process in (2) is  $S(t)$  and it can be described by the following elements:

(i) The times  $0 \leq \sigma_1 \leq \sigma_2 \leq \dots$ , of claim arrivals. Suppose that  $\sigma_0 = 0$ . The random variables  $T_n = \sigma_n - \sigma_{n-1}$ ,  $n = 1, 2, \dots$ , called inter - occurrence or inter - arrival times are nonnegative.

(ii)  $N(t) = \sup\{n : \sigma_n \leq t\}$ ,  $t \geq 0$  is the number of claims up to time t. The relations between the times  $\{\sigma_0, \sigma_1, \dots\}$  and the counting process  $\{N(t), t \geq 0\}$  are given by  $\{N(t) = n\} = \{\sigma_n \leq t < \sigma_{n+1}\}$ ,  $n = 0, 1, \dots$

(iii) The sequence  $\{Z_n, n = 1, 2, \dots\}$  of independent identically distributed random variables represents the amounts of the successful claims to the insurance company. Suppose that the sequence  $\{Z_n\}$  is independent of the counting process  $N(t)$ .

The accumulated sum of claims up to time t is given by  $S(t) = \sum_{i=1}^{N(t)} Z_i$ ,  $t \geq 0$ .

The process  $S = (S(t))_{t \geq 0}$  is defined by the sum  $S_n = Z_1 + \dots + Z_n$ , where n is a realization of the random variable

$N(t)$ :  $S(t) = Z_1 + \dots + Z_{N(t)} = S_{N(t)}$ ,  $t \geq 0$ , or a random sum of random variables. Suppose that  $S(t) = 0$ , if  $N(t) = 0$ .

In summary, according to the model, insurance claims represent expenses to the insurance company; hence negatively affect their income and growth while premiums increase income and profitability. The above theoretical model is adopted because this study considers premiums income and claims expenditure of insurance industry and their contributions to economic growth.

**F. Estimation Techniques**

In this study, we examine the relationship between insurance sector contribution to GDP, premium income, other income, claims expenditure, other expenditure, total investment and the growth of Nigerian economy using multiple linear regression technique. To test the significance of the individual explanatory variables and coefficients to determine whether there is a linear relationship between the independent and dependent variables, we use the t-test to perform the test. If the calculated t-value ( $t^c$ ) is greater than the critical value of t-alpha ( $t^{\alpha}$ ) at a scaled 5 percent level of significance, the independent variable is considered to have a linear and positive relationship with the dependent variable, and hence the null hypothesis is rejected.

The adjusted R-squared ( $R^2$ ), known as the coefficient of determination adjusted for the degrees of freedom,  $n-k-1$ , is used to ascertain the proportion of variations in economic development and growth that are explained by the regression model. Testing for the overall utility of the model, we apply the F-statistic shown in the ANOVA table reported by the

Statistical Package for Social Science (SPSS). This involves the comparison of the calculated F-statistic ( $F_c$ ) with the F-alpha at the  $n-k-1$ . If the reported F-statistic is greater than  $F_{\alpha, n-k-1}$ , it is therefore confirmed that the model has explanatory power, and that the overall model is significant. That is if  $F_c > F_{\alpha, n-k-1}$ . It is assumed that the model is significant. We will also use the Durbin-Watson statistic to test the presence or absence of auto – correlation. If the statistic has within the inclusion region, it is assumed that the model is free from both positive and negative serial correlation.

#### IV. DATA PRESENTATION, ANALYSIS, EMPIRICAL RESULTS AND DISCUSSIONS

##### A. Data Presentation

The data collated for this study is presented below;

Table 1: Trend movement of insurance sector contribution to GDP (INGDP), premium income (PREIN), other income (OTINC), claims expenditure (CLAEX), other expenditure (OTEXP), total investment of insurance firms (INVMT) and the growth of Nigerian economy (GDP at current basic prices) from 1970 to 2012.

YEAR	INGDP (N' Billion)	PREIN (N' Million)	OTINC (N' Million)	CLAEX (N' Million)	OTEXP (N' Million)	INVMT (N' Million)	GDP (N' Billion)
1970	0.0	10.8	0.4	3.8	5.3	0.0	5.3
1971	0.0	15.9	1.7	4.7	8.1	0.0	67
1972	0.0	24.7	0.9	7.5	13.1	0.0	7.9
1973	0.0	27.8	1.9	12.0	16.7	0.0	8.6
1974	0.0	36.5	2.6	13.3	17.4	0.0	18.8
1975	0.0	67.9	2.8	18.8	23.9	0.0	21.5
1976	0.0	101.1	2.1	27.6	35.4	0.0	26.7
1977	0.0	154.9	9.8	46.0	41.5	0.0	31.5
1978	0.0	159.6	7.3	55.5	61.3	0.0	34.5
1979	0.0	149.6	6.8	59.1	65.4	0.0	42.0
1980	0.0	179.6	8.7	59.4	81.8	0.0	50.0
1981	0.2	234.1	6.6	74.2	100.5	0.0	94.33
1982	0.3	248.8	10.7	79.2	110.4	0.0	101.01
1983	0.2	191.8	36.8	78.6	134.8	0.0	110.06
1984	0.2	205.7	31.9	77.7	110.3	0.0	116.27
1985	0.2	195.3	9.8	64.0	132.7	0.0	134.59
1986	0.2	254.2	9.5	86.4	135.8	0.0	134.60
1987	0.3	406.5	13.5	109.4	158.5	0.0	193.13
1988	0.3	486.6	20.0	151.1	206.4	0.0	263.29
1989	0.4	673.1	28.7	278.9	298.5	0.0	382.26
1990	0.4	1,013.7	34.8	306.5	388.6	0.0	472.65
1991	0.4	1,296.2	38.0	386.9	570.9	0.0	545.67
1992	0.5	2,445.7	72.2	613.9	1,157.6	0.0	875.34
1993	0.5	4,931.9	969.3	2,684.1	3,291.6	0.0	1,089.68
1994	0.4	14,519.1	152.5	1,315.3	2,483.6	0.0	1,399.70
1995	0.6	13,525.1	1,062.5	1,508.9	3,856.2	0.0	2,907.36
1996	1.2	11,091.3	2,059.2	1,654.1	4,262.1	12,379.5	4,032.30
1997	1.0	10,941.6	5,577.4	1,677.3	4,822.1	13,613.1	4,189.25
1998	1.1	11,688.3	6,158.2	1,956.2	5,218.1	15,656.9	3,989.45
1999	1.2	14,597.3	46.6	5,923.2	0.0	21,583.5	4,679.21
2000	1.4	22,531.5	0.0	5,629.5	0.0	25,192.6	6,713.57
2001	1.7	28,981.3	0.0	6,110.5	0.0	32,157.3	6,895.20
2002	2.5	37,765.9	0.0	6,856.1	0.0	36,940.9	7,795.76
2003	2.2	43,441.8	502.9	9,415.2	0.0	54,642.8	9,913.52
2004	3.1	50,100.8	395.1	12,084.0	0.0	74,590.8	11,411.07
2005	4.2	67,465.6	280.8	12,402.4	0.0	121,844.2	14,610.88
2006	8.3	81,583.8	778.1	76,276.1	0.0	216,359.9	18,564.59
2007	10.1	89,104.9	1,065.2	15,843.7	0.0	329,247.9	20,657.32
2008	11.6	126,470.3	2,961.3	25,864.9	0.0	336,491.4	24,296.33



2009	13.2	153,127.1	0.0	49,498.9	0.0	343,894.2	24,794.24
2010	15.2	157,336.8	0.0	37,589.6	0.0	351,459.9	54,612.26
2011	17.4	175,756.8	0.0	39,389.2	0.0	359,192.0	62,980.40
2012	20.2	252,138.1	0.0	73,162.3	0.0	399,373,199	71,713.94

Sources: References [34] and [36]

**B. Data Analysis**

As observed in table 1, insurance sector started contributing to the gross domestic product of Nigeria in 1981 with ₦0.2 billion and rose to ₦20.2 billion in 2012 representing 10,000 percent increase and average annual growth rate of 233 percent increase within the period under study. Also, premium income (PREIN) of insurance industry stood at ₦10.8 million in 1970 and rose to ₦252,138.1 million in 2012 representing 2,334,512.04 percent increase with average annual growth rate of 54,291 percent increase. Further analysis revealed that other income (OTINC) of insurance companies, which include; interest dividend and rents as well as other receipts stood at ₦0.4 million in 1970 and increased to ₦2,961.3 in 2008, which represents 740,225 percent increase. Claims expenditure (CLAEX) stood at ₦3.8 million in 1970 and rose to ₦73,162.3 million representing 1,925.22 percent increase with 44.8 percent average annual growth rate. Other expenditure (OTEXP) of insurance companies, which include; management expenses, net commission and other expenses stood at ₦5.3 million in 1970 and rose to ₦5,218.1 million in 1998 representing 98,355 percent increase. Total insurance investment (INVMT) as reported by CBN (2013) stood at ₦12,379.5 million in 1996 and rose to ₦399,373,199 million as reported by NIA (2012), which represent 3,226 percent increase with 75 % average annual growth rate within the period under study. Finally, the gross domestic product (GDP) at current basic prices stood at ₦5.3 billion in 1970 and rose to ₦71,713.94 billion representing 13,530 % increase with average annual growth rate of 315 % increase.

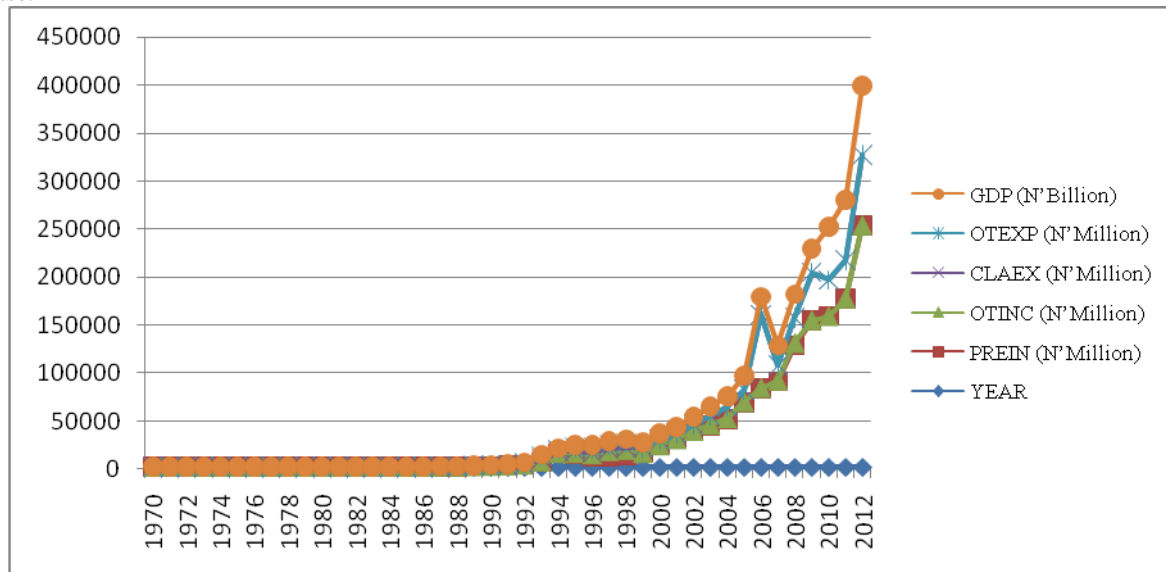


Figure 1: Graphical representation of growth movements of selected variables.

Source: Authors' representation

**C. Empirical Results and Discussions**

The empirical results of the study are presented below;

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.975	.950	.942	4.0175607E3	1.388

a. Predictors: (Constant), INVMT, OTINC, INGDP, OTEXP, CLAEX, PREIN

b. Dependent Variable: GDP

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.114E10	6	1.856E9	114.999	.000
	Residual	5.811E8	36	1.614E7		
	Total	1.172E10	42			

a. Predictors: (Constant), INVMT, OTINC, INGDP, OTEXP, CLAEX, PREIN

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.975	.950	.942	4.0175607E3	1.388

a. Predictors: (Constant), INVMT, OTINC, INGDP, OTEXP, CLAEX, PREIN

b. Dependent Variable: GDP

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-328.094	807.682		-.406	.687
	INGDP	2861.506	892.995	.890	3.204	.003
	PREIN	.049	.084	.170	.583	.564
	OTINC	-1.247	.767	-.100	-1.625	.113
	CLAEX	-.132	.071	-.147	-1.873	.069
	OTEXP	1.087	.731	.092	1.487	.146
	INVMT	2.902E-5	.000	.106	1.971	.056

a. Dependent Variable: GDP

Sources: Researchers' computation

The result is summarized as below:

$$GDP = -328.094 + 2861.5INGDP + 0.049PREIN - 1.247OTINC - 0.132CLAEX + 1.090OTEXP + 2.902INVMT$$

$$t\text{-statistic} = \{-0.406\} \{3.204\} \{0.583\} \{-1.625\} \{-1.873\} \{1.487\} \{1.971\}$$

$$\text{Std. Error} = \{807.68\} \{892.99\} \{0.084\} \{0.767\} \{0.071\} \{0.731\} \{0.106\}$$

$$R^2 = 0.950 \quad \text{Adjusted R-squared} = 0.942$$

$$F\text{-statistic} = 114.999 \quad \text{prob}(f\text{-statistic}) = 0.000000$$

$$\text{Std. Error of the Estimate} = 4.0175607 \quad \text{Durbin-Watson} = 1.388$$

A regression coefficient of -328.094 implies that there is a negative relationship between insurance sector contribution to GDP (INGDP), premium income (PREIN), other income (OTINC), claims expenditure (CLAEX), other expenditure (OTEXP), total investment of insurance firms (INVMT) and economic growth (GDP) in Nigeria. The coefficient of determination (R<sup>2</sup>) was 0.950 which implies that about 95% variations in GDP were caused by INGDP, PREIN, OTINC, CLAEX, OTEXP, and INVMT while the remaining 5% were due to other variables outside the regression model which also affects GDP growth rate in Nigeria.

To determine the significance of the independent variables, we conduct a t-test for the parameter. The test of the null hypothesis against the alternate hypothesis is to reject H<sub>0</sub> if (t) > t<sub>α/2, n-k-1</sub> where t<sub>α/2, n-k-1</sub> is obtained from the t-distribution table. Therefore, at a selected 0.05 percent level of significance with n=43, k = 6, such that t<sub>0.05/2, 43-1-6</sub> = t<sub>0.025, 36</sub>, we have critical value of 2.030. Thus, since INGDP has a t-statistic (t<sub>c</sub>) of 3.204 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = 3.204 > t<sub>t</sub> = 2.030, which means that insurance sector (INGDP) growth rate has contributed significantly to the economic growth (GDP) in Nigeria from 1970 to 2012.

Furthermore, since PREIN has a t-statistic (t<sub>c</sub>) of 0.583 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = 0.583 < t<sub>t</sub> = 2.030, which means that PREIN has a positive influence on GDP but behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria within the period under study.

Also, other income (OTINC) of insurance industry has a t-statistic (t<sub>c</sub>) of -1.625 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = -1.625 < t<sub>t</sub> = 2.030, which means that OTINC has a negative influence on GDP and behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria within the period under study.

Claims Expenditure (CLAEX) of insurance industry has a t-statistic (t<sub>c</sub>) of -1.873 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = -1.873 < t<sub>t</sub> = 2.030, which means that CLAEX has a negative influence on GDP and behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria within the period under study.

Other Expenditure (OTEXP) of insurance industry has a t-statistic (t<sub>c</sub>) of 1.487 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = 1.487 < t<sub>t</sub> = 2.030, which means that OTEXP has a positive influence on GDP but behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria within the period under study.

Total Investments (INVMT) of insurance industry has a t-statistic (t<sub>c</sub>) of 1.971 and t<sub>α/2, 36</sub> = 2.030, it therefore means that t<sub>c</sub> = 1.971 < t<sub>t</sub> = 2.030, which means that INVMT has a positive influence on GDP but behaves insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria from 1996 to 2012.



Considering the F-statistic of 114.999 and relating this to  $F_{\alpha, n-k-1}$  at 0.05, level of significance from the F-distribution, we have  $F_{0.05, 36} = 2.030$ . Thus, since  $F_c = 114.999 > F_{0.05, 36} = 2.030$ , it infers that the model behaves significantly in explaining changes in the contribution of insurance industry to economic growth in Nigeria. The F-statistic of 114.999 and prob(F-statistic) of 0.000000 also confirm that there is a linear relationship between GDP and at least one of the independent variables. The Durbin-Watson statistic of 1.388, shows that the model does not suffer from auto-correlation.

## V. CONCLUSION AND RECOMMENDATION

Among the financial intermediaries, the insurance companies play important role, they are the main risk management tool individuals, companies and government. Through issuing insurance policies, they collect funds and transfer them to deficit economic units for financing real investment. The importance of insurance is growing due to the increasing share of the insurance sector in the aggregate financial sector in almost every developing country with Nigeria inclusive.

Considering the findings of this study, it was concluded that insurance sector growth has contributed significantly to the economic growth in Nigeria. Premium income, other expenditure and total investments of insurance industry have positive influence on GDP but behave insignificantly in explaining the changes in the contribution of insurance industry to the economic growth in Nigeria. Also, other income and claims expenditure of insurance industry have negative influence on economic growth in Nigeria from 1970 to 2012. Based on this, the following recommendations are made;

- ❖ Insurance premium income generated should be reinvested into the Nigerian economy in order to enhance long run economic growth and development.
- ❖ Claims manager can also be trained in claims reporting process like, minimization of losses, investigation, verification of claims, loss evaluation and assessing the extent of the damage prior to any repair or replacement. This will help reduce the frequency of claims reports and boost premium income for economic development and growth.
- ❖ Insurance practitioners in Nigeria should be ethical in their business practices and adhered to the principles of insurance especially in prompt claims settlement.
- ❖ Since other income of insurance companies, which include; interest dividend and rents as well as other receipts contribute negatively to economic growth in Nigeria, more efforts should be channel towards identifying profitable investments opportunities for more realistic returns. This will boost other income of insurance firms in Nigeria.
- ❖ Regulatory framework by NAICOM should be effective for compliance by the players in the insurance industry.

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