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*Full Length Research Paper*

# Insurance sector development and economic growth in Nigeria

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**This article examined the short and long-run relationships between economic growth and insurance sector development in the Nigerian economy. The fixed-effect model was adopted and relevant data within the period of 1985 and 2009 were collated and analysed with the use of co-integration analysis. Gross domestic product (GDP) was adopted as a proxy for the level of economic growth, while numbers of insurance companies (NIC), premium of life-insurance (PLI), premium of non-life insurance (NLP), total insurance investment (TII), and inflation rate (INF) were used in measuring insurance sector growth. The findings revealed that insurance sector growth and development positively and significantly affects economic growth. The coefficient of multiple determinations denoted as $R^2$ with a value of 0.87 showed that about 87% variation in the dependent variable was explained by the explanatory variables while the remaining 13% was explained by the stochastic variables. The result of the Granger causality test also revealed that the extent of influence the insurance sector growth had on economic growth was limited and not direct because of some cultural, attitudinal traits and values in the country. It was recommended that government should create a good environment for insurance activities in Nigeria. The insurance companies should also engage in insurance business that is environment and customer friendly, as well as, formulating insurance policies that can accommodate every sector and segment of the economy.**

**Key words:** Insurance, economic growth, fixed-effect model, Granger-causality test, co-integration.

## INTRODUCTION

According to the finance-growth nexus theory, financial development promotes economic growth through channels of marginal productivity of capital, efficiency of channeling savings to investment, saving rate and technological innovation (Levine, 1997). Affecting economic growth through these channels is realized by functions of financial intermediaries. These functions include the provision of means for clearing and settling payments to facilitate the exchange of goods, services and assets, the provision of a mechanism for pooling resources together and channeling them to the most productive sector of the economy for investment, risk management, and price information to help coordinate decentralized decision making in various sectors of the economy, among others (Merton and Bodie, 1995).

Among financial intermediaries, the insurance companies play important role, they are the main risk management tool for companies and individuals. 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. Insurance companies, together with mutual and pension funds, are one of the biggest institutional investors in stock, bond and real estate markets and their possible impact on the economic development will rather grow than decline due to issues such as widening income disparity and globalization.

Insurance companies are similar to banks and capital markets as they serve the needs of business units and private households in intermediation. The availability of

insurance services is essential for the stability of the economy and can make the business participants accept aggravated risks. By accepting claims, insurance companies also have to pool premiums and form reserve funds. So, insurance companies are playing an important role by enhancing internal cash flow at the assured and by creating large amount of assets placed on the capital market.

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 companies contribute to. Well-developed financial markets have a significant positive impact on total factor productivity, which translates into higher long-run development. Based on Solow's (1956) work, Merton (2004) noted that due to the absence of a financial system that can provide the means of transforming technical innovation into broad implementation, technological progress will not have significant and substantial impact on the economic development and growth. The main objective of this article is to investigate the link between the insurance sector development and economic growth of Nigeria and hence to fill a gap in the current finance-growth nexus.

Given that the insurance institutions not only facilitate a myriad of economic transactions through risk transfer and indemnification but are also seen to promote financial intermediation, it is surprising that rigorous and in-depth research of this kind is not more prominent among research topics.

## Historical background of insurance in Nigeria

The origin of modern insurance are intertwined with the advent of British trading companies in the region and the subsequent increased inter-regional trade. Increased trade and commerce led to increased activities in shipping and banking, and it soon became necessary for some of the foreign firms to handle some of their risks locally (Adeyemi, 2005). Trading companies were therefore subsequently granted insurance agency licenses by foreign insurance companies. Such licenses made it possible for such firms to issue covers and assist in claims supervision. The first of such agency in Nigeria came into force in 1918 when the Africa and East trade companies introduced the Royal Exchange Assurance Agency. Other agencies include Patterson Zochonis (PZ) Liverpool, London and Globe, BEWAC's Legal and General Assurance and the Law Union and Rock (Jegede, 2005).

There was an initial slow pace of the growth of the insurance industry in Nigeria, particularly between 1921 and 1949. This has been traced to adverse effect of the World War II on trading activities both in the United Kingdom and Nigeria. As soon as the war ended, business activities gradually picked up again, and insurance industry in Nigeria began to record remarkable improvement in growth (Gbede, 2003). It was not until 1958 that the first indigenous insurance company, the African Insurance Company Limited, was established. At independence, only four (4) of the then twenty five (25) firms in existence were indigenous. By 1976, the number of indigenous companies had far surpassed that of the foreign companies. As at September 2005, there were one hundred and four (104) insurance companies and four (4) reinsurance companies in existence before recapitalization.

Regulation of Nigeria insurance industry has become substantially intensified in the last two (2) decades. There are risks of potential abuse, low level awareness, poor market penetration, low operating capital, as well as low capacity for retention and acceptance of foreign risks (Ezekiel, 2005), all of which led to massive regulation of the insurance sector of Nigeria financial system. The first major step at regulating the activities of insurance business in Nigeria was the report of Obande. J C. commission of 1961, which resulted in the establishment of department of Insurance in the Ministry of Trade and which was later transferred to the Ministry of Finance. The report also led to the enactment of Insurance Companies Act of 1961, which came into effect on 4$^{th}$ May, 1967. By the provisions of the Act, the office of the Registrar of Insurance was created to supervise insurance practice. Other provisions of the Act included minimum capital requirement and other conditions for registration, monitoring, and control of insurance operation generally. This was followed by a series of legislation which sought to further the cause of insurance regulation in the country. The first major attempt at regulating insurance in the country was the promulgation of the Nigerian Insurance Decree, 1976.

The biggest development in the Nigerian insurance includes the National Insurance commission (NAICOM) seizing control of the largest insurer - NICON. National Insurance Commission (NAICOM) is a refurbished institution, established by the penultimate military administration in the country in 1997. The power of NAICOM under the prevailing legislation for the industry in the country, the Insurance Act 2003, is clearly comprehensive. Section 86 of the Act provides that subject to the provision of the Act, NAICOM shall be responsible for administration and enforcement of the provisions of the insurance Act. Criteria and standards for registration, policy provision, rates, expenses limitations, valuation of asset and liabilities, investment funds, and the qualifications of sale representatives are set by NAICOM.

The first major recapitalization process was introduced by the insurance Act 2003. Section 9 of the Act raised the minimum capital requirement by as much as 650%. This recapitalization exercise which ended in February 2004,

**Table 1.** Capital base for Nigerian insurance institutions.

| Category of insurance | Old capital base (2003) (₦) | New capital base (2005-till date) (₦) | Increase in percentage (%) |
|---|---|---|---|
| Life Insurance | 150 million | 2 billion | 1,233.0 |
| General Insurance | 200 million | 3 billion | 1,400.0 |
| Composite | 350 million | - | - |
| Reinsurance | 350 million | 10 billion | 2,757.0 |

Source: Hakeem and Tajudeen (2010).

however, still left over 107 insurance as well as reinsurance operators in the market and was perceived as not effectively achieving the aim of drastically reducing the number of players in the industry (Fatula, 2007). Section 9(4) of the Insurance Act provides that NAICOM may increase the amount of minimum capital requirement from time to time. The then Minister of Finance announced a new minimum capital regime in September 2005 which was to be complied with by the end of February 2007. While previous Insurance Act 2003 only required new capital of less than ₦ 500 million (about $ 4 million); the 2005 recapitalization directive required a minimum of ₦ 2 billion (about $ 15 million) for life insurance and ₦ 3 billion (about $ 23 million) for non-life business. The 2005 recapitalization changed the landscape considerably as many companies were forced to merge in compliance with the follow-up directive of NAICOM that the requirements were only to be met through mergers and acquisitions. Table 1 shows the old and the new capital base of the Nigerian insurance institutions with the percentage increases.

Out of the 104 insurance companies and 4 reinsurance companies in existence before the pronouncement, 49 insurance and 2 reinsurance companies met the new level and were certified by the government in November 2007. Based on the new capital base, insurers are to raise their capital according to the risks they underwrite. This is to enable insurers to concentrate on businesses in which they have core competence. The regulatory institution, NAICOM, is not looking at the direction of fresh recapitalization but a risk-based capital which will enable the insurance companies to recapitalize in accordance with the risks it is taking. For example, if you are an insurance company that does aviation and oil and gas underwriting, then you must have the wherewithal to absolve those risks. If you are an insurer that does motor insurance alone, you do not need the same capital.

## The impact of insurance on economic growth

By providing protection, insurance companies could affect economic growth through the channels of marginal productivity of capital, technological innovations and savings rate. Insurance companies indemnify the ones who suffer a loss and stabilize the financial position of individuals and firms with possibility of transfer of different kinds of risks to insurance companies. Risk adverse economic units are more induced to buy goods and services, especially those of higher value. In this way, insurance sustains demands or consumptions for goods and services which encourage production and employment which result in multiplier effect on economic growth. Again, firms exposed to various risks of their liability, property, illness and disability of their employees and life of key employees, have the possibility of managing those risks by transfer to insurance companies. This allow firms to concentrate their attention and resources on their core business which can lead to willingness and ability to take real investment which result in higher rate of economic growth.

Without mechanisms for mutualization, pooling, and transferring risk which insurance companies provide, part of the economic activities would not take place and positive effects on social welfare would fail. In other words, by creating an environment of greater security, insurance fosters investment and innovation or economic growth. Insurance increases marginal productivity of capital also in a way that it makes no need for high liquid contingency funds of firms which results in more funds available for financing high-return projects. Without insurance coverage, large contingency funds would be needed to protect firms against risk. Increasing availability of funds could result from kind of insurance products by which insurance companies provide protection from credit risk to other financial intermediation. In that way, financial intermediaries are more willing to lend funds for financing real investments which encourage economic growth.

Furthermore, new demographic situation of prolongation of life expectancy, an increase in elderly people and a falling birth rate and expectation of high level of healthcare and pensions makes big pressure on social security system and could have negative effect on economic growth. But, private insurers could give their contribution in solving the problem of social security system. They provide protection from the financial consequence of illness and injury, unemployment and retirement. Thus, insurance products such as life, health and payment protection insurance, can substitute for

government security programs. The function of providing insurance coverage could affect economic growth through saving rate channel in a mixed way. On one side, insurance protection contributes to greater security which makes individuals and firms less careful. As a consequence, they could lower their precautionary savings. On the other side, by offering various life insurance products that combine risk protection and saving benefits, insurance companies encourage long-term savings.

## REVIEW OF EMPIRICAL LITERATURE

Beenstock et al. (1988) applied pooled time series and cross-sectional analysis on 1970 to 1981 data, covering mainly 12 countries. They employed multiple regression model to analyze the effect of premiums for property liability insurance (PLI) on gross national product (GNP), income and interest rate development, and found that premiums are correlated to interest rate and GNP; marginal propensity to insure (short and long-run) rises with income per capita and is always higher in the long-run. Outreville (1990) conducted a cross-section analysis on PLI premium for the year 1983 and 1984 for 55 developing countries onto GDP, insurance price and macroeconomic figures. The results are similar to Beenstock et al. (1988) and support the significance of income and financial development (M2/GDP).

Brown and Kim (1993) analyzed life insurance consumption per capita for 45 countries for the years 1980 to 1987 with the multiple regression model on cross-sectional data on various country figures, such as income or inflation rate: income dependency and social security expenses are positively correlated, while inflation is negatively correlated and significant in both years. The religious origin, that is, being a Muslim country is always negatively connected to insurance consumption and so, the findings support the works of Hofstede (1995, 2004) and Fukuyama (1995) in their reasoning that social backing influences insurance demand.

Zhuo (1998) focused on China and conducted a cross-regional study for 1995 and a time – series analysis for the period 1986 to 1995. In accordance with other findings, both the cross-regional and the time series analysis show that GDP per capita and consumer price index (CPI) are significantly correlated with insurance consumption.

Holsboer (1999) concentrated on the changes in the external environment for insurance companies in Europe in the period under review. He argued that the change of importance of insurance services in the economy is dependent on the growing amount of assets and the increasing competition in the financial sector. He built the following model which is based on Aaron (1966): interest rate (R), growth of the working population (N), the economic growth rate (G), superior benefits of the pay-as-you-go pension system if R< N+G, superior benefits of the funded pension system if R>N+G, and both pension system providing equal benefits if R=N+G. As population aging and the move from pay-as-you-go (PAYG) system to privately funded schemes favours the growth of the insurance industry and facilitated capital market development with increasing supply of long-term savings, Holsboer (1999) saw the interaction between the insurance and economic growth as bi-directional.

Brown et al. (2000) applied a pooled cross-sectional panel model to motor vehicle and general liability insurance in the OECD over the 1986 to 1993 periods. They analyzed liability insurance consumption on a variety of factors, including income, wealth and legal system. Income and the legal system are positively correlated with insurance consumption while loss probability and wealth are negatively correlated with insurance consumption. They argued that income affects insurance consumption.

Zurbruegg (2000) examines the short and long-run dynamic relationships between economic growth and growth in the insurance industry for nine OECD countries. This was achieved by conducting a co-integration analysis on a unique set of annual data for real GDP and total real premiums issued in each country from 1961 to 1996. Causality tests were also conducted, which account for long-run trends within the data. The results from the tests suggest that in some countries, the insurance industry Granger cause economic growth and in other countries, the reverse is the case. Moreover, the result indicates that the relationships are country specific and any discussion of whether the insurance industry does not promote economic growth will be dependent on a number of national circumstances.

Ward and Zurbruegg (2000) analyzed Granger causality between total real insurance premiums and real GDP for nine OECD countries over the period of 1961 to 1996 and found that the insurance market is leading the GDP for Italy; they also found a bi-directional relationship. The results for other countries shared no connection. The result of ECM added Australia and France to the group of countries giving evidence for some kind of connection.

Beck and Webb (2002) applied a cross-country and time series analysis for the relation between life insurance penetration, density, and percentage in private savings and GDP as the dependent variables, real interest rate, inflation volatility and others as the explanatory variables. Strong evidence was found for GDP, oil dependency ratio, inflation and banking sector development. Inflation, real interest rate, secondary enrolment and private savings were found to be significant. The cross country analysis shows a negative coefficient for a country being of Islamic origin and adds institutional development to the indicators connected positively to insurance demand.

Webb et al. (2002) used a Solow-Swan model and incorporates both the insurance and the banking sector, with the insurance divided into property/liability and life products. Their findings indicate that financial intermediation is significant. When split into the three categories, banking and life sector remain significant for GDP growth, while property/liability insurance lose their importance. Furthermore, results show that a combination of one insurance type and banking has the strongest impact on growth.

Lim and Haberman (2003) concentrated on the Malaysian life insurance market. While the interest rate for savings deposits and price enter significantly in the equation, the positive sign for the interest rate puzzles the authors. This could be in line with findings of Webb et al. (2002) who found the best results when insurance and banking sector are combined in the estimates.

Webb et al. (2005) analyzed the effect of banking and insurance on the growth of capital and output based on cross-country data of 55 countries for the period from 1980 to 1996. The insurance variable is measured by average insurance penetration (insurance premium relative to GDP) of life and non-life insurance respectively. At the first stage of ordinary least square (OLS) estimation, assuming exogenous financial variables indicate positive effect of banking development on economic growth, while insurance variables do not enter significantly. The results of simultaneous equations, assuming endogenous relationship between financial activity and economic growth, show that higher levels of banking and life insurance penetration predict higher rates of economic growth.

Kugler and Ofoghi (2005) examined the long-run relationship between insurance market size and economic growth in United Kingdom for the period from 1966 to 2003 for long-term insurance, and for the period from 1971 to 2003 for general insurance (from 1991 to 1997 for marine-aviation, transport insurance and reinsurance). The study used disaggregated data for the measure of market size. That is, net written premium for each market in insurance industry in the UK is used as a measure of market size for that market. Causality tests show that there is a long-run causality from growth in insurance market size to economic growth for eight (8) out of nine (9) insurance markets. Using Johansen's co-integration test, the result shows a long-run relationship between development in insurance market size and economic growth for all components of insurance market.

Adams et al. (2005) examined the dynamics and historical relation between banking, insurance and economic growth in Sweden in the period from 1830 to 1998. Insurance development is measured by annual aggregate (non-life and life) insurance premiums. They used time series data and econometric tests of co-integration and granger causality. The results show that the development of banking, but not insurance, preceded economic growth during the nineteenth century, while it was reversed in the twentieth century. Insurance development appears to be driven more by the pace of growth in the economy rather than leading economic development over the entire period of analysis.

Peter and Kjell (2006) worked on the relationship of insurance and economic growth, a theoretical and empirical analysis which was presented as a paper at the 2006 ECoMOd conference in Hong Kong. They applied a cross country panel data analysis using annual insurance premium data from 29 European countries over the 1992 to 2004 period. They found a weak evidence for a growth-supporting role of life insurance and explain this with similarities to recent bank and stock sector findings

Arena (2008) worked on the empirical study and causal relationship between insurance market activity and economic growth which include 56 countries (both developed and developing ones) in the period from 1976 to 2004. Insurance premiums are used as proxies of total life and non-life insurance activities separately. As an estimation method, the author used the generalized method of moment for dynamic models of panel data. The result shows a positive and significant effect of total, life and non-life insurance market activity on economic growth. The author also examined the possibility of non-linear effect of life and non-life insurance variables on economic growth, but the results did not show the non-linearity in the relationship.

Haiss and Sümegi (2008) applied a cross country panel data analysis from 29 European countries in the period from 1992 to 2005. The insurance variable is measured by premium income and total net investment of insurance companies. Premium income is split into life and non-life premium income. As estimation method, the authors use ordinary least squares (OLS) or unbalanced panel with country and time-fixed effects. According to the findings, there is a positive impact of life insurance on GDP growth in the EU-15 countries; Switzerland, Norway and Iceland, while non-life insurance has a larger impact in Central and Eastern Europe.

Wadlamannati (2008) examined the effects of insurance growth and reforms along with other relevant control variables on economic development in India in the period from 1980 to 2006. Growth of insurance penetration (life, non-life and total) is used as proxies of insurance sector growth. The author applied ordinary least square (OLS), co-integration analysis and error correction models (ECM). The study confirms positive contribution on insurance sector to economic development and a long-run equilibrium relationship between the variables. While the reforms in the insurance sector do not affect economic activity, their growth has positive impact on economic development.

Marijuana et al. (2009) empirically examined the relationship between insurance sector development and economic growth in 10 transition European Union

**Table 2.** Summary of stationarity test.

| Variables | Order of stationarity |
|---|---|
| GDP | 1(1) |
| NIC | 1(2) |
| PLI | 1(2) |
| NLP | 1(1) |
| TII | 1(1) |
| INF | 1(0) |

member countries in the period from 1992 to 2007. Three different insurance variables were used; life, non-life and total insurance and other control variables like education, openness, inflation, investment, bank credit, stock capitalization. According to their findings, insurance sector development positively and significantly affects economic growth. The results are confirmed in terms of life and non-life insurance, as well as total insurance.

These empirical findings show that there exists a strong concern for insurance development in the reviewed literatures. However, the results of the empirical researches carried out up to date are mixed. It is in the light of these that the study intends to analyze the impact of the insurance sector development on the Nigerian economic development and growth.

## METHODOLOGY

This research estimates and analyses the relationship between insurance sector development and economic growth of Nigeria using co-integration estimation technique of error correction models (ECM) with data over the period of 1985 to 2009. The model (fixed – effect model) of the work of Marijuana et al. (2009) is adopted and modified to suit the Nigerian context. The model is stated as follows:

$$Yit = \alpha it + \beta LIit \sum_{k=1}^{25} OkCit + Eit$$

Where i - country; t - time; Yit - dependent variable (intercept term); Lit - insurance variables; Cit - control variables; α - constant parameter; β and O - coefficients of explanatory variables while Eit stands for the disturbance term.

The model adopted gross domestic product (GDP) growth as dependent variable, life, non-life and total insurance as explanatory variable, private credit, and stock capitalization, gdp per capital, investment, education, openness and inflation as control variables. The model is however modified in this study by using gross domestic product (GDP) at market price as the dependent variable, introducing number of insurance companies in Nigeria (NIC) and total insurance investment (TII) into the model. Furthermore, the insurance sector premium is divided into premium of life insurance (PLI) and premium of non-life insurance (NLP). Inflation (INF) is chosen as the control variable. This model can be written both in a functional and equation form as follows:

GDP=f (NIC, PLI, NLP, TII, INF, μ)

That is, $GDP= B_0 + B_1NIC + B_2PLI + B_3NLP + B_4TII + B_5INF + \mu$

Where GDP – gross domestic product at market price; NIC – number of insurance companies in Nigeria; PLI – premium of life insurance companies in Nigeria; NLP – premium of non-life insurance companies in Nigeria; TII – total insurance investment; μ - disturbance term; $B_1$, $B_2$, $B_3$, $B_4$, $B_5$ are the coefficient of explanatory variables; $B_0$ is the constant parameter.

It is expected that all the explanatory variables except inflation rate (INF) should be positively related to GDP while inflation rate (INF) is expected to be negative in relation to GDP. At the first stage, the parameters are estimated by ordinary least square (OLS) of regression analysis to know the short-run relationships of the parameters. The test for stationarity is done using the Augmented Dickey-Fuller (ADF) unit root test. The test is being done at various levels of stationarity; at first and second difference levels. The stationarity of the parameters is being determined if the ADF statistics is greater than the Mackinnon critical value at 5%. The test for the long-run relationship is done using the Johansen co-integration test. The long-run relationship is being determined if the trace statistics is greater than 5% critical value at the non hypothesized stage.

The second stage is the test for causality using the pairwise Granger causality test. This is being done to know the extent of influence that the insurance sector development has on the economic growth of Nigeria. A test for the significance of the parameters is being done using the Standard Error test and the F-distribution test is being done to know the reliability of the model. The data being used in this study comes from the CBN statistical bulletin, NAICOM website, FSDH research estimate, NBS statistics, among others.

## EMPIRICAL RESULTS

Using the ordinary least square (OLS) of regression estimate at the first stage, the result is in conformity with our expectation as all the variables, except inflation rate (INF) is positively related to gross domestic product (GDP). The coefficient of determination of about 98% shows a strong positive relationship among the variables and that the explanatory variables adequately describe gross domestic product (GDP) in the short-run. Before moving to the long-run stage, we test for the stationarity of the parameters using the Augmented Dickey-fuller (ADF) unit root test. Table 2 represents the unit root test results on the specified parameters.

Table 2 shows that gross domestic product (GDP), premium of non- life insurance (NLP) and total insurance investment (TII) are stationary at their respective first differences. Furthermore, number of insurance companies (NIC), and premium of life insurance (PLI) is stationary at their respective second differences. Inflation rate (INF) is at stationary at level. All these stationarities are at 5% critical level of ADF unit root test. We therefore moved to the next step of finding a long-run relationship using the Johansen co-integration tests. Table 3 shows the result of the co-integration test on the specified model.

**Table 3.** Result of Johansen co-integration test.

| Hypothesized no. of ECS | Eigen value | Trace statistics or likelihood | 5% Critical value | 1% Critical value |
|---|---|---|---|---|
| None ** | 0.987901 | 216.4883 | 94.15 | 103.18 |
| At most 1 ** | 0.914545 | 114.9518 | 68.52 | 76.07 |
| At most 2 ** | 0.693588 | 58.37711 | 47.21 | 54.46 |
| At most 3 * | 0.556246 | 31.17212 | 29.68 | 35.65 |
| At most 4 | 0.322652 | 12.48499 | 15.41 | 20.04 |
| At most 5 | 0.142089 | 3.524874 | 3.76 | 6.65 |

The result of Table 3 shows that a long-run relationship exists between economic growth and the development of the insurance sector of Nigeria. At 5% significant level, the hypothesis of no co-integrating relationship is rejected in favour of accepting the hypotheses of the presence of co-integration between economic growth of Nigeria and development of her insurance sector. This is determined because the trace statistics is greater than 5% critical value at None**. Having established the long-run relationship among the variables through the Johansen co-integration test, the next stage is the short-run model of error correction. The result of the unit root test conducted on ECM shows that it is stationary at level. The error correction model which can be overparameterized, is estimated by setting the lag length long enough in order to ensure that the dynamics of the model have not been constrained by a too short lag length and parsimoneous ECM, and estimated by removing variable that has a probabilities less than 10%. The standard error is employed as a guide to this reduction exercise.

From the result of both the overparameterized and parsimoneous ECM, it could be deduced that the former has a $R^2$ of about 87% which is higher than that of the latter with just 11%. The ECM value of the former is also higher than that of the latter with a value of 0.996420. the result also shows that the ECM is significant. From the overparameterized ECM, the equation can be written as:

GDP=0.967816NIC + 0.144344PLI + 0.383767NLP + 0.411544TII – 0.049072INF

This equation is in conformity with our expectation as it also shows that the model is significant in the long-run. The result of the pairwise Granger Causality tests shows that there exists a bi-lateral relationship between Number of Insurance Companies (NIC) and Gross Domestic Product (GDP). It also shows a unilateral relationship between PLI, NLP, TII and GDP. A bi-lateral relationship also exists between Inflation (INF) and GDP.

From the analysis, there exists a long-run relationship of co-integration between insurance development and GDP; evidence of causation is however sparse for the Nigerian economy. However, once Nigeria is allowed to display both short and long-run dynamics, the inter-causation between growth in the economy and the insurance development becomes more prominent.

## SUMMARY AND CONCLUDING REMARKS

Modifying the fixed-effect model of Marijuana et al. (2009) and co-integration estimation technique, we examined whether life and non-life insurance, number of insurance companies as well as total insurance Investment in addition to a control variable of inflation rate contribute to economic growth of Nigeria using a range period of between 1985 and 2009.

According to the results, insurance sector development promotes economic growth of Nigeria. Thus, function of insurance companies - providing means of risk management and performing mobilization and allocation of resources (Marijuana et al., 2009) - are important for economic growth. As increase in number of insurance companies contribute to economic growth according to the result, it is suggestive for insurance sector policy maker to implement the policies that are going to provide more insurance companies with high competitive mind and increasing efficiency in the insurance industry. Adequate regulation should be targeted at providing institutional improvements, especially in risk management and product development of insurance companies.

The causal relationship between economic growth and insurance development of Nigeria is limited and not direct. This is because the influence of insurance market development in performing the role of intermediation is tempered by some negative factors in Nigeria. These factors can be identified as low per capita income, lack of orientation of the importance of insurance, cultural values undermining the popularity of insurance and adequate regulatory framework for insurance industry in Nigeria.

The study recommends that the compulsory insurance policies stipulated by the insurance Act should be properly sold in the society and well publicized. Also, micro-insurance that is environment friendly, meaningful, relevant and affordable for different people should be designed so that insurance will take its rightful place and generate funds for economic development. This was the recent assertion by the NAICOM commissioner (Fola, 2011). Finally, it is recommended that more research

should be carried out to find out more about the impact and efficiency of insurance sector development on economic growth and development in the Nigerian environment.

**REFERENCES**


Aaron HJ (1966). "The Social Insurance Paradox". Can. J. Econom. Polit. Sci., p. 32.

Adams MJ, Andersson LF, Lindmark M (2005). "The historical Relation between Banking, Insurance And Economic Growth in Sweden: 1830 to1998", Department of Economic Discussion Paper. SAM, 26.

Adeyemi M (2005). "An Overview of the Insurance Act 2003". Issues in Merger and Acquisition for the Insurance Industry. pp. 61-78 (ED) Ezekiel. O.C. Being Proceeding of the 2003 NIA Workshop on Insurance ACT 2003. Nigeria Insurance Association.

Arena M (2008). "Does insurance market promote Economic Growth? A cross-country Study for Industrialized And developing countries". J. Risk Insur., 75(4): 921-946.

Beck T, Webb I (2002). "Economic, Demographic and Institutional determinants of life Insurance Consumption across countries". World Bank and International Insurance Foundation.

Beenstock M, Dickinson G, Khajuria S (1988). "The determination of life premium: An International Cross-section Analysis 1970-1981". Insur. Math. Econom., pp. 261-270.

Brown MJ, Chung, JW, Frees EW (2000). "International Property-liability insurance consumption". J. Risk Insur., 67(1): 73-90.

Brown MJ, Kim K (1993). "An international Analysis of life Insurance Demand". American Risk and Insurance Association. J. Risk Insur., 60(4): 616-634.

Ezekiel OC (2005). "The Nigerian Insurance Market In The Context Of the Insurance Act 2003". Issues In Merger and Acquisition for the Insurance Industry. pp. 61-78 (ED) Ezekiel. O.C. Being Proceeding of the 2003 NIA Workshop on Insurance ACT 2003. Nigeria Insurance Association.

Fatula O (2007). "The imperative of Recapitalisation and Consolidation in the Nigeria Insurance Industry" I (I&II), Ikeja Bar Review, p. 128.

Fola D (2011). "We aim for Trillion naira income with compulsory insurance: An interview with Nike Popoola on the NAICOM's plan to move the sector Forward, Sunday punch, January 9.

Fukuyama F (1995). The social virtues and the creation of prosperity. Hanish Hamilton, London. Gbede G O (2003). Marketing Insurance Services. Westbourne Business School, Lagos.

Haise P, Sümeg K (2008). "The relationship between Insurance and Economic Growth in Europe. A Theoretical and empirical analysis". Empirica, 35(4): 405-431.

Hakeem OY, Tajudeen Y (2010). "Regulation in an age of crisis" A paper for presentation at the 3rd ECPR Regulatory governance standing group conference, University College, Dublin 17-19 June.

Hofstede G (1995). "Insurance as a product of National values", Geneva Pap. Risk Insur., 20(4): 423-429.

Holsboer JH (1999). "Repositioning of the Insurance Industry in the financial sector and its Economic role", Geneva Pap. Risk Insur., 24(3): 243-290.

Jegede MI (2005). "A Comprehensive Analysis of the Insurance Act 2003 and Its Implications on the Insurance Business Environment" Issues In Merger and Acquisition for the Insurance Industry. A Proceeding of the 2003 NIA Workshop on Insurance ACT 2003. (ED) Ezekiel O C, pp. 61-78. Nigerian Insurance Association.

Kugler M, Ofoghi R (2005). "Does insurance promote economic growth?. Evidence from the UK", Working Paper, division of Economic, University of Southampton.

Levine R (1997). "Financial development and Economic Growth: views and agenda". J. Econom. Lit., 35(2): 688-726.

Lim C, Haberman S (2003). "Macroeconomic variables and the demand for life Insurance in Malaysia". Faculty of Actuarial Science and Statistics, FASS Business School, City University, London.

Marijuana C, Sandra L, lime P (2009). "Insurance Sector development and Economic growth in Transition countries". Int. Res. J. Financ. Econom., issue 34.

Merton RC (2004). "Financial Innovation and Economic growth". Harvard China review. p. 5.

Merton RC, Bodie Z (1995). "A conceptual framework for analyzing the financial environment". Eds. Crane et al DB The global financial system, a Functional perspective, Harvard Business School press. pp. 3-31.

Outreville JF (1990). "The Economic significance of Insurance Market in Developing Countries". J. Risk Insur., 57(3): 487-498.

Peter RH, Kjell S (2006). "The relationship of insurance and economic growth, A theoretical and Empirical analysis". A paper for presentation at the 2006 EcoMod Conference, Hongkong. June 28-30.

Wadlamannati KC (2008). "Do Insurance Sector Growth and Reforms affect Economic Development? Empirical evidence from India". J. Appl. Econom. Res., 2(1): 43-86.

Ward D, Zurbruegg R (2000). "Does Insurance Promote Economic Growth? Evidence from OECD Countries". J. Risk Insur., 67(4): 487-506.

Webb I, Grace MF, Skipper H (2005). "The effect of Banking and Insurance on the growth of Capital and Output". J. Financial issues, 2(2): 1-32.

Webb IM, Grace F, Skipper H (2002). "The effect of Banking and Insurance On the growth of Capital and Output". Centre for risk Management and Insurance Working paper, 02-1, Robinson College of business, Georgia State University, Atlanta.

Zhuo Z (1998). Insurance Sector Development and Economic Growth: An Empirical Analysis from China Portfolio Management, University of Manhnheimer.