Financial Intermediation and Corporate performance: Evidence from Insurance Companies in Nigeria

Yusuf Olatunji, OYEDEKO1*, Mohammed ZUBAIRU2
1Department of Banking and Finance, Faculty of Management Sciences, Federal University Oye Ekiti, Ekiti State, Nigeria.
2Department of Business Administration, Faculty of Administration, Ahmadu Bello University, Zaria –Nigeria.
yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com.
+2348061386774/+2348037861681

pp 206-221

ABSTRACT

The study examines financial intermediation and corporate performance with an emphasis on insurance companies. Time series data collected over a successive point in time and ex post -facto research design. The population the study comprises all the insurance companies operating in Nigeria as at December 2018 without limitation to their area of operation in insurance business. The study adopts purposive sampling technique. Thus, the sample of the study covers the period of thirty-six years spanning from 1981 to 2016. The data to be used for the study are extracted from secondary sources only. The secondary data were sourced from Central Bank of Nigeria statistical bulletin, Bureau of statistics reports, the National Pension Commission Annual Reports, Text books and academic Journals. The study adopts vector autoregressive models such as vector error correction mechanism, autoregressive distributed lag and Toda and Yamomoto VAR approach to cointegration. The study found that insurance investment, insurance claim and insurance premium exhibit dynamic effect on insurance companies' growth, profitability and penetration. The study concluded that insurance intermediation operations have effect on corporate performance of insurance companies in Nigeria. In line with the conclusion, the study recommends that management of insurance companies should ensure that optima combination of assets should form their portfolio.

Keywords: Insurance investment, Insurance claim and Insurance premium, Insurance companies' growth, Insurance companies' profitability, Insurance companies' penetration

1.0 Introduction

Insurance business is also seen as the backbone of any country 's risk management system, since it ensures financial security, serves as an important component in the financial intermediation chain, and offers a ready source of long term capital for infrastructural projects in Nigeria (Augustine & Nwanneka, 2011). Similarly, insurance business plays a vital role in the Nigerian economy through risk bearing, employment of labour, payment of tax, providing vehicle for investors and other financial investment services, (Hamadu & Mojekwu, 2010). Therefore, it is important to ensure that insurance companies' in Nigeria are performing efficiently and significantly. Insurance companies are the sellers and suppliers of insurance product in Nigeria. According to the Nigerian Insurance Act 2003, there are two broad categories of insurance business in Nigeria: life insurance business; and non-life (General) insurance business. It is permitted under the Nigerian laws for an insurance company to engage in both, life insurance and non-life insurance activities. Furthermore, insurance companies in Nigerian were established to provide insurance cover for life insurance and non-life insurance. The life insurance companies provide cover for individual life, group life, pension and health risks, while non-life insurance activities include those in respect to fire, general accident, motor vehicle, marine and aviation, oil and gas, engineering, bond credit, guarantee and surety ship and miscellaneous insurance. Moreover, reinsurance companies in Nigeria were established to provide cover for insurance companies in Nigeria. The re-insurers also provide technical security and capacity for the insurance companies and do not supply insurance directly to the consumers (Hamadu & Majekwu, 2010). Moreover, in Nigeria, there are many international as well as indigenous insurance companies. Therefore, the formation of Insurance and re-insurance companies has to be with the approval of the Corporate Affairs Commission under conditions stipulated in Companies and Allied Matters Act, No. 1 of 1990 which was amended 2004. In addition, registration has to be made with the National Insurance Commission (NAICOM).

Globally, the performance of insurance companies is an important indicator of a thriving economy that could lead to an increase in Gross Domestic Product (GDP) of a nation, more specifically non-banking sector like insurance companies (USAID, 2012). Furthermore, the world economy has become more integrated; firms have been facing more and more pressure to disclose their business performance. In this view, regulators all over the world are negotiating and harmonizing global insurance regulations which could lead to greater standardization of insurance policies and promote globalization of the insurance value chain. Thus, this will also improve insurance intermediation operations. The necessity of insurance companies in Nigeria is due to the fact that most of the business organisations operate in a non-stable and dynamic environment which is full of risk and uncertainty and have a significant effect on the performance of the business organization.

In view of this, reform was introduced on 5th September, 2005 and ended on 28th February, 2007 by NAICOM. Besides, eight (8) years after completion of the reform; the official report revealed that the performance of insurance companies in Nigeria still remains below average (NAICOM, 2014). This is because there is lack of awareness and researches on the importance of insurance companies even when conducted most of the studies mostly focused on the effect of insurance companies on economic growth and development and some concentrate on determinants of insurance companies' performance but to the best of the researcher's knowledge very little studies exist on insurance companies' intermediation operation and performance of insurance companies in Nigeria. Based on this, this study intends to bridge the gap in the literature and contribute to the existing knowledge by examining dynamic effect of insurance companies intermediation operations on the performance of insurance companies in Nigeria. in line with this objective, the following research questions are stated; What effect does insurance intermediation operations have on growth of insurance companies in Nigeria? Do insurance intermediation operations have effect on profitability of insurance companies in Nigeria? Does insurance intermediation operations granger cause penetration of insurance companies in Nigeria? In consonance with these research questions, the following research hypotheses are formulated; Insurance intermediation operations have no significant effect on growth of insurance companies in Nigeria; Insurance intermediation operations have no significant effect on profitability of insurance companies in Nigeria; There is no granger causation between Insurance intermediation operations and penetration of insurance companies in Nigeria.

2.0 Literature Review

Literarily, intermediation is the of mobilizing resources from the surplus units for the use of the deficit units for investment purposes. The process bridge the gap between the ultimate users of the funds and ultimate savers of the funds. The institutions that serve as a link between those units those are in excess of funds and those in need of funds for economic activities are referred to financial intermediaries. Institutions that serve as financial intermediaries

include deposit money banks, Merchant Banks, Development Banks and Specialised Bank, Insurance Companies, Pension and Provident funds and unit Trust. Thus study focused on insurance intermediation operations. Performance measurement, on the other hand, measures both social impact and organizational performance, though in a less rigorous manner. In recent years performance measurement has gained popularity, especially as shareholders and regulators look for ways to compare organizations' efficiency within the periods. A measure (or metric) is a quantitative value that can be used for purposes of comparison (Simmons 2000). However, based on this study performance of insurance companies in Nigeria are measured by three proxies which are growth, profitability and penetration. Having explained the key concept, the study reviewed some of the related literature as follows; Kaguri (2013) conducted a study on moderating effect of firm characteristics (size, diversification, leverage, liquidity, age, premium growth and claim experience) on financial performance of life insurance companies in Kenya. The study findings indicated that the variables were statistically significance to influencing financial performance of life insurance companies as indicated by the positive and strong Pearson correlation coefficients. Empirical analysis by Daniel and Tilahun (2013) investigated the determinants of performance in Ethiopian insurance companies using a panel data set consisting of financial data of nine insurers over the period of 2005 to 2010. The results of regression analysis reveal that insurers' size, tangibility and leverage are statistically significant and positively related with return on total asset; however, loss ratio (risk) is statistically significant and negatively related with ROA. Thus, insurers' size, Loss ratio (risk), tangibility and leverage are important determinants of performance of insurance companies in Ethiopia. But, growth in writing premium, insurers' age and liquidity have statistically insignificant relationship with ROA. A study by Eze and Victor (2013) examined the impact of insurance practice on the growth of Nigerian economy. The study used insurance premium income, total insurance investment and income of insurance development as determinants of insurance practice. The study observed that the insurance premium has significantly impacted on economic growth in Nigeria and that there is causal relationship between insurance sector development and economic growth in Nigeria. Muhaizam (2013) investigated the determinants of financial performance with an emphasis on general Takaful and insurance companies in Malaysia using panel data over the period of 2004 to 2007, using investment yield as the performance measure. The study found that size of the company, reinsurance dependence and solvency margin are statistically significant determinants of the investment performance of the general Islamic insurance companies in Malaysia. For conventional insurance, all factors are statistically significant determinants of investment performance, except for equity returns.

Mwangi, and Iraya (2014) investigated the determinants of financial performance of general insurance underwriters in Kenya. The study found that financial performance was positively related to earning assets and investment yield. Financial performance was negatively related to loss ratio and expense ratio. Growth of premiums, size of underwriter and retention ratio were not significantly related to financial performance. Lee (2014) investigated the relationship between firm specific factors and macroeconomics on profitability in Taiwanese property-liability insurance industry using the panel data over the1999 through 2009-time period. The results showed that underwriting risk, reinsurance usage, input cost, return on investment (ROI) and financial holding group have significant influence on profitability in both operating ratio and ROA models. The study concluded that insurance subsidiaries of financial holding group compared with other insurance companies have lower profitability. Yusuf, and Ajemunigbohun, (2015) studied the effectiveness, efficiency, and promptness of claims handling process in the Nigerian insurance industry. The study found that managing claims effectively and efficiently had significantly affected operational process in claims management and thus, promptness in claims handling processes does essentially assist in fraud detection and prevention.

Angima and Mwangi (2017) conducted study on effects of underwriting and claims management on performance of property and casualty insurance companies in East Africa. The findings showed that there is a significant positive relationship between underwriting and claims management practices employed by the firms and non-financial performance, but the relationship with financial performance was insignificant. From the literature reviewed, it is explicit that most to studies concentrated on firm specific factor as determinant of financial performance but few of the study examined insurance intermediation operations on performance of insurance companies. Thus, this study breaches the existing gap in the literature and contributes to body of literature on insurance intermediation operations and performance of insurance companies. Thus, in carrying out this study, resource-based theory is anchored on.

3.0 Methodology

The data to be used for this study are time series data collected over a successive point in time. Therefore, the research design appropriate for the study, considering the research problem, the questions and the hypotheses to be tested is ex post -facto research design. The population the study comprises all the insurance companies operating in Nigeria as at December 2018 without limitation to their area of operation in insurance business. The sample of the study comprises all the insurance companies operating in Nigeria as at December 2018 because the data used for this study time series. The study adopts purposive sampling technique. Thus, the sample of the study covers the period of thirty-six years spanning from 1981 to 2016. The data to be used for the study are extracted from secondary sources only. The secondary data were sourced from Central Bank of Nigeria statistical bulletin, Bureau of statistics reports, the National Pension Commission Annual Reports, Text books and academic Journals. The study adopts vector autoregressive models such as vector error correction mechanism, autoregressive distributed lag and Toda and Yamomoto VAR approach to cointegration. The model specifications of the three VAR models are specified as follow;

$$\Delta^{ko}GR_t = \Theta_o + \Sigma_{i=1}^{n}\Theta_1(\Delta^{k1}CLAIM_{t-i}) + \Sigma_{i=1}^{n}\Theta_2(\Delta^{k2}INV_{t-i}) + \Sigma_{i=1}^{n}\Theta_3(\Delta^{k3}PRE_{t-i}) + \Sigma_{i=1}^{n}\Theta_4(ECM_{t-i}) + \mu. (3.1)$$

The ARDL form can be given as:

$$PR_t = b_0 + \sum_{k=0}^{n} biCLAIM_{t-i} + \sum_{k=0}^{n} biINV_{t-i} + \sum_{k=0}^{n} biPRE_{t-i} + w_t \ldots\ldots\ldots\ldots 3.2$$

$n = n^1 = n^2 = n^3$

The Toda and Yamomoto is specified below:

$$\Delta^{ko}PEN_t = \Theta_o + \Sigma_{i=1}^{n+dmax}\Theta_1(\Delta^{k1}CLAIM_{t-i}) + \Sigma_{i=1}^{n+dmax}\Theta_2(\Delta^{k2}INV_{t-i}) + \Sigma_{i=1}^{n+dmax}\Theta_3(\Delta^{k3}PRE_{t-i}) + \Sigma_{i=1}^{n}\Theta_4(ECM_{t-i}) + \mu_t \ldots\ldots (3.3)$$

From the models specifications, GR represents insurance growth, CLAIM represents insurance claim, INV represents insurance investment, PRE represents insurance premium, ECM represent error correction mechanism, Θo- Θ4 and b0- bi represent the coefficients, ut and wt represent error term. For this analysis the model is specified in log equation in order to smooth the data all variables were converted to natural logarithm. The use of natural logarithm, rather than levels and percentage changes, mitigates correlations among the variables. Also, it helps in reducing heteroscedasticity as it compresses the scale in which variables are being measured. Kuwornu (2012).

Table 3.1: Measurement of Variable and Definition

S/N	Variables	Types of Variables	Measurements	Source
1	Insurance Growth	Dependent Variable	Logarithm of total assets	Momudu, Ezirim, and Olaletan (2015)
2	Insurance Profitability	Dependent Variable	Income divided by total asset	Momudu, et al (2015)
3	Insurance Penetration	Dependent Variable	Premium divided by gross domestic product	Momudu, et al (2015)
4	Insurance Claim	Independent Variable	Index	CBN Statistical Bulletin
5	Insurance investment	Independent Variable	Index	CBN Statistical Bulletin
6	Insurance premium	Independent Variable	Index	CBN Statistical Bulletin

Source: Author's Compilation, (2019)

4.1 Result

The data set on the variables for this study is summarized on yearly basis for quick overview as presented in table 4.1 below.

Table4.1 -Data Set on Insurance Claim, Investment, Penetration, Premium, Profita bility and Growth

	1981	1982	1983	1984	1985
CLAIM	1.87	1.90	1.90	1.89	1.81
INV	3.01	3.06	3.04	3.13	3.29
PEN	0.0	0.0	0.0	0.0	0.0
PREM	2.37	2.40	2.28	2.31	2.29
PROF	0.04	0.03	0.01	0.02	0.00
GROWTH	3.24	3.42	3.23	3.31	3.31
	1986	1987	1988	1989	1990
CLAIM	1.94	2.04	2.18	2.45	2.49
INV	3.40	3.42	3.63	3.72	3.80
PEN	0.0	0.0	0.0	0.0	0.1
PREM	2.41	2.61	2.69	2.83	3.01
PROF	0.02	0.05	0.05	0.03	0.08
GROWTH	3.36	3.44	3.51	3.58	3.62
	1991	1992	1993	1994	1995
CLAIM	2.59	2.79	3.43	3.12	3.18
INV	3.82	4.01	4.31	4.37	3.85
PEN	0.1	0.1	0.2	0.7	0.7
PREM	3.11	3.39	3.69	4.16	4.13
PROF	0.09	0.01	-0.01	2.71	1.44
GROWTH	3.63	3.69	3.72	3.60	3.81

	1981	1982	1983	1984	1985
CLAIM	1.87	1.90	1.90	1.89	1.81
INV	3.01	3.06	3.04	3.13	3.29
PEN	0.0	0.0	0.0	0.0	0.0
PREM	2.37	2.40	2.28	2.31	2.29
PROF	0.04	0.03	0.01	0.02	0.00
GROWTH	3.24	3.42	3.23	3.31	3.31
	1986	1987	1988	1989	1990
CLAIM	1.94	2.04	2.18	2.45	2.49
INV	3.40	3.42	3.63	3.72	3.80
PEN	0.0	0.0	0.0	0.0	0.1
PREM	2.41	2.61	2.69	2.83	3.01
PROF	0.02	0.05	0.05	0.03	0.08
GROWTH	3.36	3.44	3.51	3.58	3.62
	1991	1992	1993	1994	1995
CLAIM	2.59	2.79	3.43	3.12	3.18
INV	3.82	4.01	4.31	4.37	3.85
PEN	0.1	0.1	0.2	0.7	0.7
PREM	3.11	3.39	3.69	4.16	4.13
PROF	0.09	0.01	-0.01	2.71	1.44
GROWTH	3.63	3.69	3.72	3.60	3.81
	1996	1997	1998	1999	2000
CLAIM	3.22	3.22	3.29	3.77	3.75
INV	4.09	4.13	4.19	4.33	4.40
PEN	0.5	0.5	0.5	0.7	1.0
PREM	4.04	4.04	4.07	4.16	4.35
PROF	0.25	0.26	0.26	0.10	0.14
GROWTH	4.46	4.58	4.62	4.70	4.79
	2001	2002	2003	2004	2005
CLAIM	3.79	3.84	3.97	4.08	4.09
INV	4.51	4.57	4.74	4.87	5.09
PEN	1.1	1.3	1.4	1.4	1.8
PREM	4.46	4.58	4.64	4.70	4.83

	2006	2007	2008	2009	2010
CLAIM	4.88	4.20	4.41	4.69	4.58
INV	5.34	5.52	5.53	5.54	5.55
PEN	2.0	2.1	2.7	3.1	2.9
PREM	4.91	4.95	5.10	5.19	5.20
PROF	0.13	0.19	0.21	0.22	0.25
GROWTH	5.49	5.63	5.76	5.77	5.77
	2011	2012	2013	2014	2015
CLAIM	4.60	4.61	4.62	4.63	4.73
INV	5.56	5.54	5.52	5.32	5.68
PEN	3.1	3.9	3.6	3.7	1.8
PREM	5.24	5.37	5.35	5.39	5.09
PROF	0.28	0.60	0.27	2.62	1.26
GROWTH	5.79	5.50	5.72	5.46	5.81
	2016				
CLAIM	5.66				
INV	5.71				
PEN	10.3				
PREM	5.84				
PROF	1.68				
GROWTH	5.85				

Source: Annual Statistical CBN Bulletin

Table 4.1 presents approximate data point on each variable through 1981 to 2016. The data set for insurance claim, penetration, premium, profitability, investment and growth are converted to ratio in order to maintain a constant unit for all the variables. In respect of these metrics or units of measurement, the descriptive statistics are calculated, and as indicated in table 4.2.

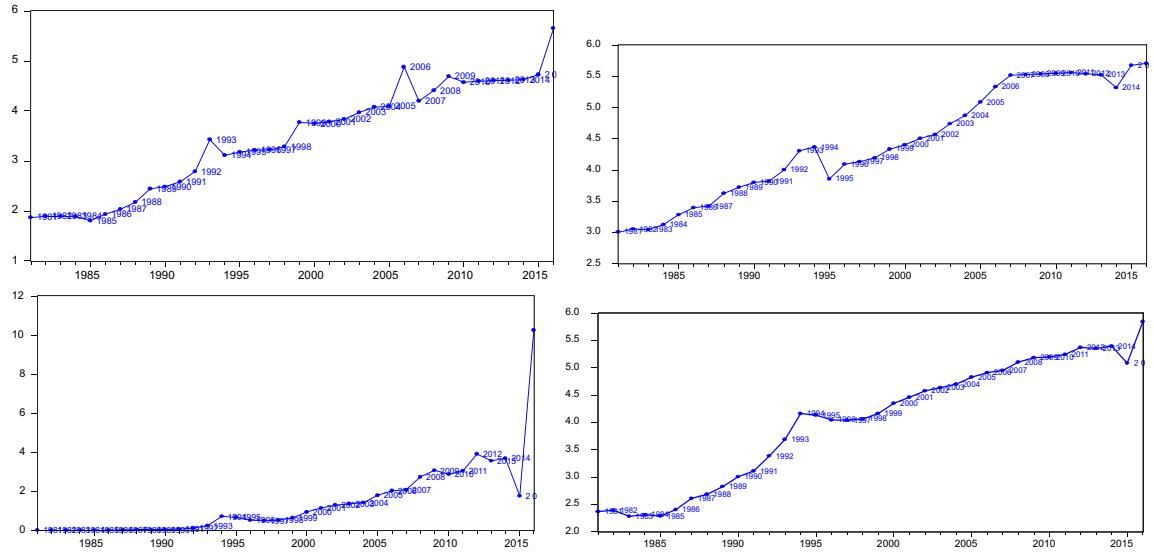
Table 4.2 -Descriptive Statistic Results

	CLAIM	INV	PEN	PREM	PROF	GROWTH
Mean	3.449457	4.432041	1.426359	4.032969	0.394669	4.542333
Median	3.589635	4.350000	0.695618	4.163107	0.176032	4.658825
Maximum	5.656855	5.705458	10.26356	5.843368	2.709198	5.846936
Minimum	1.806173	3.006144	0.013059	2.282851	-0.014247	3.231469
Std. Dev.	1.090162	0.889726	1.952048	1.116459	0.680988	0.972204
Skewness	-0.073733	-0.022498	2.743235	-0.314627	2.442167	-0.016735
Kurtosis	1.853762	1.701629	12.66392	1.732522	7.943546	1.380507
Jarque-Bera	2.003412	2.531690	185.2390	3.003693	72.44306	3.935819
Probability	0.367252	0.282001	0.000000	0.222719	0.000000	0.139749
Observations	36	36	36	36	36	36

Source: Author's computation from E -view Output (2019)

Table 4.1 shows the summarized descriptive statistics computed on the series of insurance claim, insurance investment, insurance penetration, insurance premium insurance profitability and insurance growth respectively. It is remarkable that both the median and average values are positive in each case. I also observe that there is a significant margin between the median and mean. This means these variables displayed an increasing tendency through the period of investigation. Thus, there is statistical evidence that since the period of 36 years insurance claim, insurance investment, insurance penetration, insurance premium insurance profitability and insurance growth have been increasing.

Although, there is a minimum value in the profitability as shown by the descriptive statistics, this implies decrease in the profitability of insurance companies in Nigeria to the tune of (0.014247). Looking at the range of these variables, insurance penetration has the largest range (10.26356-0.013059) with a an associated largest standard deviation value of 1.952048 and this implies that insurance penetration is the most volatile variable among the variable under consideration. In a different token, insurance profitability has the lowest range of (2.709198-0.014247) with an associated lowest standard deviation value of 0.680988 and this implies that insurance penetration is the most volatile variable among the variable under consideration. The scale of skewness with respect to insurance claim, insurance investment, insurance premium and insurance growth are negatively skewed and this implies that they exhibit large values over a long portion of the sampling period. On the contrary, insurance penetration and insurance profitability are positively skewed and have large values over a short period. The values of kurtosis that are larger than 3 show that insurance penetration and insurance profitability are leptokurtic, and therefore, they have tin tail in their distribution pattern, suggesting that there are presence of outliers or large values in the expected future date. However, while insurance claim, insurance investment, insurance premium and insurance growth are plytokurtic in nature. Finally, the probability values corresponded to JB statistics with respect to insurance penetration and insurance profitability are lesser than 5 percent, meaning that the distribution pattern of these variables is not normal. However, the probability values in respect to insurance claim, insurance investment, insurance premium and insurance growth are larger than 5 percent. This implies that these variables are normally distributed. The study proceeds to describe these variables using graphs as demonstrated below.



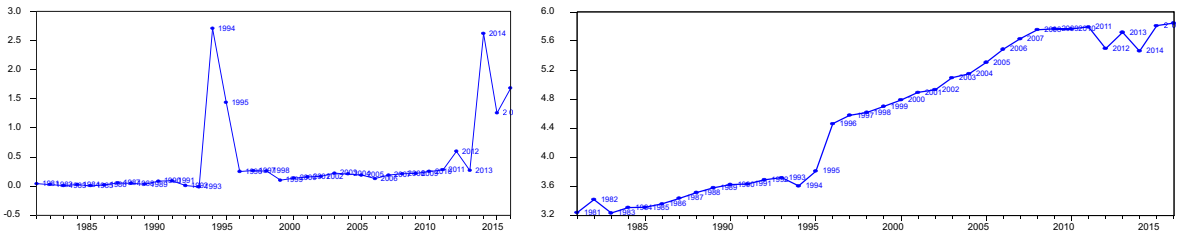


Figure 1: Line Graph of CLAIM, INV, PREM, PEN, PROF, GROWTH

The visual illustration shows that the insurance claim, insurance investment, insurance penetration, insurance premium, insurance profitability and insurance growth are persistently increasing and decreasing throughout the sample period. The graphs do not show any traces of constant trend. They all started rising gradually, but dwindling in-between the sampling period. Having described the underlying characteristics of the data collected on the interested variables. Summarily, both the statistical and visual methods provided mixed results with respect to symmetric, mexokurtic and normality features of the variables. However, by confirming the possibility of fitting the data into regression equations for estimation purpose, the study conducts pre-model estimation test using optimum lag selection approach and Augmented Dickey-Fuller (ADF) method for stationarity test. Table 4.3 provides the summarized results of the optimum lag selection approach while table 4.4 reports the result of stationarity test. In actual sense, test for lag selection precedes the unit root test. The maximum lag selection test based on all information criteria for the specified variables is conducted and the results are depicted in table 4.3 below.

Table 4.3 Optimum Lag Structure

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-107.2326	NA	4.77e-05	7.077039	7.351865	7.168136
1	62.79611	265.6699	1.15e-08	-1.299757	0.624022	-0.662079
2	140.9793	92.84253	1.06e-09	-3.936206	-0.363475	-2.751946
3	220.8824	64.92130	1.48e-10	-6.680152	-1.458468	-4.949312
4	339.6239	51.94937*	7.10e-12*	-11.85149*	-4.980854*	-9.574069*

*Note that: * indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion and HQ: Hannan-Quinn information criterion.*

Source: Author's computation from E-view Output (2019)

The optimum lag is given by the smallest value of the information criteria. In the table above all the information criteria- FPE, AIC, SC and HQ have the smaller value at lag 4; implying that 1 is the optimum lag selected by these information criteria. Thus, the AR framework that gives rise to unit root test are operationalized using lag 4 as the optimal lag.

Table 4.4-Test of Unit Root Based on ADF Mechanism

Variable	ADF-stat	5% critical value	P-value	Int
Prof	-4.887750	2.948048	0.0168	I(0)
Pen	-12.28883	2.960411	0.0000	I(2)
Growth	-6.460520	2.951125	0.0000	I(1)
Cla	-7.415206	2.951125	0.0000	I(1)
Inve	-6.203266	2.951125	0.0000	I(1)
Prem	-4.887750	2.951125	0.0004	I(1)

Source: Author's computation from E-view Output (2019)

4.1.1 Estimation Test

In the methodological background, the study proposed three relationships or three set of insurance intermediation operations that drive insurance performance in Nigeria. The first set comprises insurance intermediation operations and insurance companies' growth in Nigeria, while the second comprises insurance intermediation operations and insurance companies' profitability in Nigeria and the third set of the relationship is insurance intermediation operations and insurance companies' penetration in Nigeria. In response to the first set of the relationship the study subjects the variables to long run cointegration analysis using Johansen

method, error correction analysis and dynamic short run analysis introduced by Granger because all the variables under consideration (insurance claim, insurance investment, insurance premium, and insurance growth) are integrated at first difference only. The result of the cointegration test is presented below:

Table 4.5 Cointegrating factor

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Panel A:				
None *	0.869232	121.7459	63.87610	0.0000
At most 1	0.525980	58.68158	62.91525	0.0607
At most 2 *	0.521647	35.53991	45.87211	0.0723
At most 3 *	0.335714	12.68033	22.51798	0.1470
Panel B				
None *	0.869232	63.06427	32.11832	0.0000
At most 1	0.525980	23.14167	25.82321	0.1087
At most 2	0.521647	22.85958	29.38704	0.1050
At most 3	0.335714	12.68033	22.51798	0.1470

Source: Author's computation from E-view Output (2019)

As shown in table 4.5, the outputs of the trace test are reported in panel A, and those of the maximum Eigen test are presented in panel B. In the first raw of panel A, the trace statistic (121.7459) is larger than the 5 percent critical value (63.87610), meaning that the trace test rejects the null hypothesis that there is no cointegration. However, in the second raw, the trace statistic (58.68158) is less than the critical value (62.91525), and as such the null hypothesis that there is only one cointegrating vector cannot be rejected. In an analogous vein, the null hypothesis that there is no cointegration is rejected in panel B based on the maximum Eigen value test. So also, the hypothesis of only one cointegrating vector is not rejected. Therefore, the trace and maximum Eigen tests unanimously consent that there is one cointegrating vector. This is also confirmed by the result of the probability values displayed in both panel A and B. This simply implies that there is strong evidence that insurance companies' growth in Nigeria and insurance intermediation operations correlate together in the long run. The nature of this long run relationship is shown in table 4.6.

Table 4.6-Nature of the Long Run Relationship between Growth, Inv, Claim and Premium

Variable	Coefficient	Std-error	T-value
Inv(-1)	0.233939	(0.17230)	[1.35771]
CLAIM(-1)	-0.078059	(0.50276)	[-0.15526]
PREM(-1)	-0.896918	(0.39163)	[-2.29023]

Source: Author's computation from E-view Output (2019)

The long run coefficient with respect to insurance investment is 0.233939 and the associated t-value 1.35771. This means in the long run insurance investment will decrease significantly with increase in insurance companies' growth in Nigeria. The long run coefficient of insurance claim is -0.078059 and the associated t-value of -0.15526 and this imply that insurance claim has a negative but insignificant effect on insurance companies' growth in Nigeria. Insurance premium has a coefficient is -0.896918 with associated t-value-2.29023 and this implies insurance premium has a negative and insignificant on insurance companies' growth in Nigeria. The disequilibrium in the long run must be corrected otherwise, long run relationship does not exist. The correction mechanism is referred to error correction model (ECM). The study estimates the ECM coefficient along with short run dynamic coefficients, and the values of these coefficients are presented in table 4.7.

Table 4.7-Dynamic Short Run Relationship between Growth, Inv, Claim and Premium, and the ECM Coefficient

Variable	Coefficient	Std-error	T-value
ECM	-0.725395	(0.12390)	[-5.85490]
D(GROWTH(-1))	-0.410615	(0.18354)	[-2.23717]
D(INV(-1))	-0.087841	(0.19555)	[-0.44920]
D(CLAIM(-1))	0.116626	(0.11880)	[0.98168]
D(PREM(-1))	-1.482363	(0.26768)	[-5.53776]

Source: Author's computation from E-view Output (2019)

Table 4.7 uniquely presents the coefficients of short run dynamic variables- D(GROWTH (-1)), D(INV(-1)), D(CLAIM(-1)), D(PREM(-1)) and ECM coefficient. The dynamic coefficient of insurance growth at lag 1 is negative. This means an increase in previous insurance growth could lead to decrease in current insurance growth in the short run. While previous insurance investment and insurance premium influence current insurance growth negatively. Hence, in the short run dynamic changes in the insurance claim could lead to positive changes in insurance growth. The ECM coefficient is negative -0.725395, suggesting that any disequilibrium can be corrected at the speed or rate of 72 percent within a year. In view of this, there is long run dynamic causality or influence running from insurance intermediation operations to insurance companies' growth in Nigeria.

Based on second hypothesis the study conduct the ARDL approach to cointegration to yield the short run dynamic relationship, long run relationship and the equilibrium parameter because the order of integration between insurance intermediation operations and insurance companies' profitability in Nigeria is I(1) and I(0). Thus, the test for ergodicity and LM serial correlation are carried out in order to conform with the pre-requirements for the ARDL or Bond test to cointegration.

4.2.1 Testing for LM Serial Correlation and Ergodicity

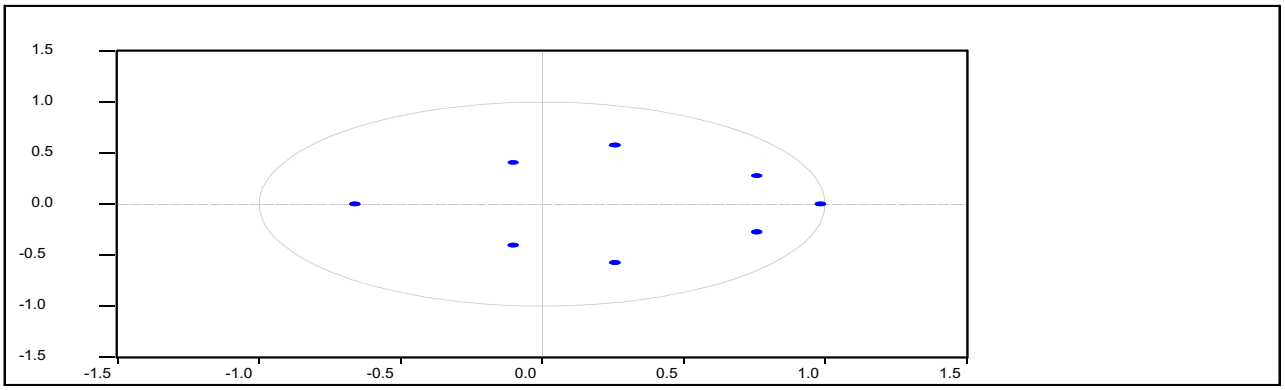
This test is carried out for the ARDL specifications between the insurance intermediation operation and profitability. Table 4.7 reports the test of LM serial correlation for the relation between insurance intermediation operation and profitability

Table 4.8 Showing LM Serial Correlation Test f or Insurance Intermediation Operation-Insurance Companies' Profitability Nexus

Lags	LM-Stat	Prob
1	15.68101	0.4754
2	15.75147	0.4704
3	16.48037	0.4200

Source: Author's computation from E-view Output (2019)

The study examined the LM statistics up to lag 3 and the statistics appear to be very small; while the corresponding p-values are respectively larger 5 percent. In view of this, the null hypothesis of no serial correlation cannot be rejected. The residuals are independently spread. The test for ergodicity is carried out by computing the root of the AR polynomial and it is shown in the figure 4.2 below.

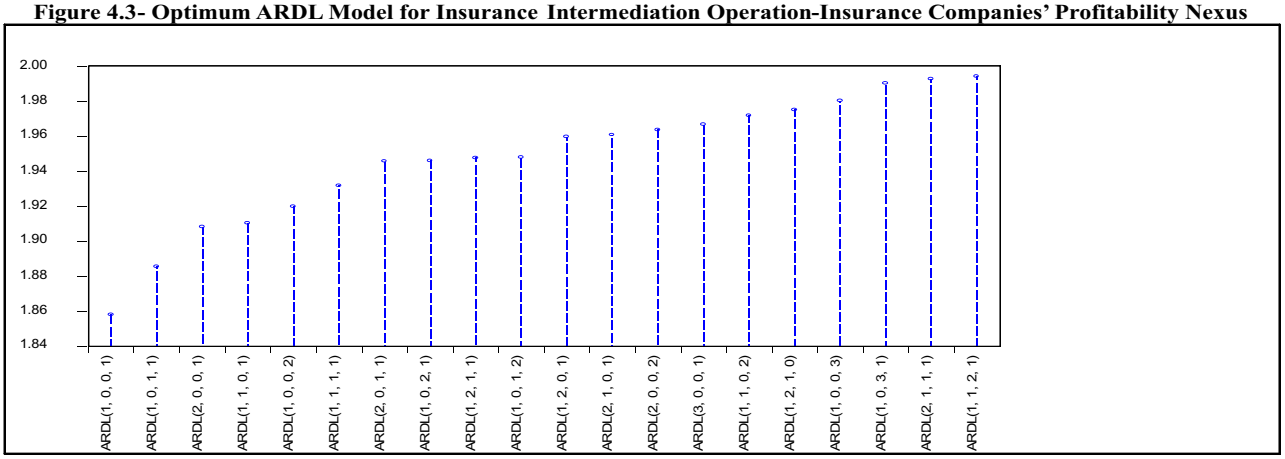


The root of the polynomial is the blue dot found within the unit cycle or interval and it is less than 0.5. Since the modulus or the polynomial root is less than 1 and is within the unit interval; the null hypothesis that the ARDL process is not stationary is rejected. Thus, the ARDL process for industrial out-banking factor specification is ergodic and the residual term for this system is reversible.

4.2.2 Model Selection

To test the hypothesis for this study, Autoregression Distributed Lag (ARDL) of various orders are tested; precisely 500 ARDL models are evaluated for each relationship, in which the study present the top 20 ARDL models below based on their information criteria. The Akaike Information Criterial (AIC) is adopted for the section of the optimum ARDL model. The result is presented in figure 4.3.

Figure 4.3- Optimum ARDL Model for Insurance Intermediation Operation-Insurance Companies' Profitability Nexus



The ARDL model with the highest AIC value (almost approaching 2.0) among the top ARDL models is ARDL (1,1, 2,1). While the smallest AIC is 1.84 corresponding to ARDL (1, 0,0,1). Thus, ARDL (1, 0, 0, 1) is the optimum ARDL model.

4.2.3 Testing for Autocorrelation

The classical assumption says that if the residuals are autocorrelated, the estimated parameters will be inconsistent and bias. I conduct a test for the violation of this assumption on the two ARDL models selected. Tables 4.4 and 4.5 present the results.

Table 4.9 -Autocorrelation Test for ARDL (1, 0, 0, 1) Quoted for Insurance Intermediation Operation - Insurance Companies' Profitability Nexus

	AC	PAC	Q-Stat	Prob*
1	0.106	0.106	0.4280	0.513
2	-0.129	-0.142	1.0781	0.583
3	0.032	0.065	1.1197	0.772
4	0.012	-0.019	1.1260	0.890
5	0.066	0.083	1.3149	0.933

Source: Author's computation from E -view Output (2019)

The residuals of the ARDL (1, 0, 0, 1) quoted for insurance intermediation operations-insurance companies' profitability nexus tested for autocorrelation. The test results are shown in table 4.9. As observed in the table from lag 1 to 5, the p-values associated with the Q statistics are in each case greater than 5 percent alpha value, suggesting that hypothesis of no autocorrelation is not rejected. The model is appropriate based on the autocorrelation test.

4.2.4 Cointegration Test based on Bond Approach

The first question to address in this study is the issue of long run relationship. Here the specific hypothesis tested are insurance companies' profitability maintains a cointegrating relationship with insurance claim, insurance investment and insurance premium. In view of this, the study conducts bound test, whose results are reported in table 4.10.

Table 4.10 -Bound Test Results on Insurance Intermediation Operation -Insurance Companies' Profitability Nexus

Test-stat	Value	Sig	I (0)	I (1)
			Asymptotic: n=1000	
F-statistic	9.857093	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	33		Finite Sample: n=35	
		10%	2.618	3.532
		5%	3.164	4.194
		1%	4.428	5.816
			Finite Sample: n=30	
		10%	2.676	3.586
		5%	3.272	4.306
		1%	4.614	5.966

Source: Author's computation from E -view Output (2019)

As shown in the table the F statistic is 9.86, the lower bound I (0) values at 5 percent for the asymptotic sample and finite sample are 2.79 and 3.164 respectively; while the upper bound 1 (1) at 5 percent for the asymptotic sample and finite sample are 3.67 and 4.194 respectively. It seems good that the F statistic 9.86 exceeds the upper value in both sample sizes. Even in the less sample size where n=30, the F statistic still exceeds the upper value at 5 percent. This suggest that the null hypothesis that no level relationship is rejected at 5 percent level of significance. This investigation finds out that there is existence of cointegrating relationship between insurance companies' profitability, insurance claim, insurance investment and insurance premium. This answers the question of cointegration between these variables.

4.2.5 Long Run Multiplier Effects

Evidences based on tables 4.10 indicate that long run relationship exists among the variables of interest in the base line models. This serves as a background to test the hypotheses whether there are positive or negative multiplier effects from the set of the covariates to the explained variable in each model. The test results are reported in tables 4.11 for insurance intermediation operation-insurance companies' profitability nexus.

Table 4.11 Insurance Intermediation Operation-Insurance Companies' Profitability Treated for Log Run Multiplier Effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CLAIM	-1.940977	1.286335	-1.508920	0.1421
INV	0.141599	0.923719	0.153293	0.8792
PREM	2.013218	1.009135	1.994993	0.0555
C	-1.927881	1.868619	-1.031715	0.3107

Source: Author's computation from E-view Output (2019)

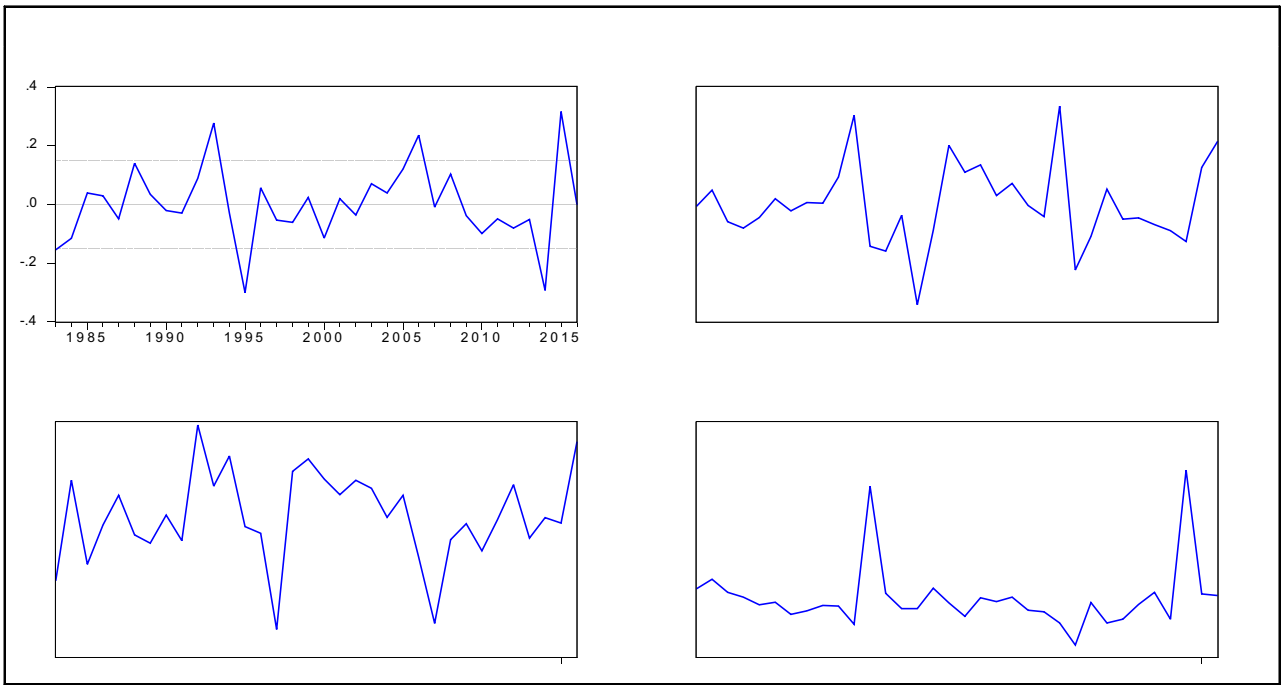
Table 4.11 shows that coefficients of insurance claim, insurance investment, insurance premium and insurance companies' profitability are -1.940977, 0.141599 and 2.013218 respectively; with corresponding probabilities of 14%, 87% and 5%. This implies that positive multiplier effects run from insurance claim, insurance investment and insurance premium to insurance companies' profitability in the long-run. Specifically, a 1 percent change in insurance claim decreases insurance companies' profitability by 194 percent. While a 1 percent rise in insurance investment and insurance premium leads to 14 percent and 201 percent increase in insurance companies' profitability respectively. It has long been discovered that within the purview of the short run situation, variables are not static rather dynamic because their present values depend on the previous values. Based on this stylized fact, the researcher attempts to investigate the short run dynamic relationship between the covariates and explained variables of the model specified for these variables in the previous chapter of the study. Therefore, tables 4.13 report the results of the short run dynamics and the adjustment parameter.

Table 4.13 Insurance Intermediation Operation-Insurance Companies' Profitability Treated for Short Run Dynamic Relationship and Adjustment Parameter

Regressors	Coefficient	Std-error	T-value	P-value		
D(CLAIM)		-1.038975		0.543489	-1.911675	0.0658
D(INV)		0.075796		0.485611	0.156083	0.8770
D(PREM)		2.739372		0.780573	3.509436	0.0015
CointEq(-1)		-0.535284		0.170937	-3.131468	0.0040

Source: Author's computation from E-view Output (2019)

The table reveals the adjustment parameter of -0.53 with the probability value of 0.0040 percent. This implies two basic condition of error correction mechanism was met which are; the value must be negative and lies between -1 and 0. This implies that, the long run causality or influence runs from insurance claim, insurance investment, and insurance premium to insurance profitability and also, 53 percent disequilibrium is to be corrected within a year. This suggests that 53 percent disequilibrium in economic growth is corrected/adjusted when insurance claim, insurance investment, and insurance premium rate jointly changes by 1 percent. The coefficient of insurance claim is negative (-1.038975) and significant. This affirms that insurance claim has negative short run dynamic influence on insurance profitability. Also, the coefficients of insurance investment have a positive (0.075796) but insignificant. This affirms that insurance investment has negative short run dynamic influence on insurance profitability Remarkably, the coefficient of insurance premium has a positive and significant short run effect on insurance profitability.



Based on third hypothesis the study conduct the Toda and Yamomoto Var to cointegration to yield the short run dynamic relationship, long run relationship and the equilibrium parameter because the order of integration between insurance intermediation operation and Penetration is I(1) and I(2). Thus, the test for ergodicity and LM serial correlation are carried out in order to conform with the pre-requirements for the ARDL or Bond test to cointegration. The pre-model estimation tests that are necessary to conduct are optimum lag structure and the autocorrelation LM Test. The results are presented in the table 4.14 and 4.15 below.

4.3.1 Maximum Lag Selection

The maximum lag selection test based on all information criteria for the specified variables is conducted and the results are depicted in table 4.13 below

Table 4.13 Optimum Lag Structure

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-83.32418	NA	0.003288	5.633818	5.818849	5.694133
1	25.51708	182.5724	8.33e-06	-0.355941	0.569212*	-0.054364
2	51.19835	36.45084	4.72e-06	-0.980539	0.684737	-0.437701
3	61.16602	11.57536	8.11e-06	-0.591356	1.814042	0.192744
4	102.6988	37.51346*	2.15e-06	-2.238631	0.906889	-1.213270
5	130.8069	18.13429	1.86e-06*	-3.019802*	0.865841	-1.753179*

*Note that: * indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion and HQ: Hannan-Quinn information criterion.*

Source: Author's computation from E -view Output (2019)

The optimum lag is given by the smallest value of the information criteria. In the table the information criteria- FPE, AIC and HQ have the smaller value at lag 5 while the information criteria-LR and SC have smaller value at 4 and 1 respectively; implying that 5 is the optimum lag selected by these information criteria. Thus, the AR framework that gives rise to unit root test is operationalized using lag 5 as the optimal lag.

4.3.2 Testing for LM Serial Correlation and Ergodicity

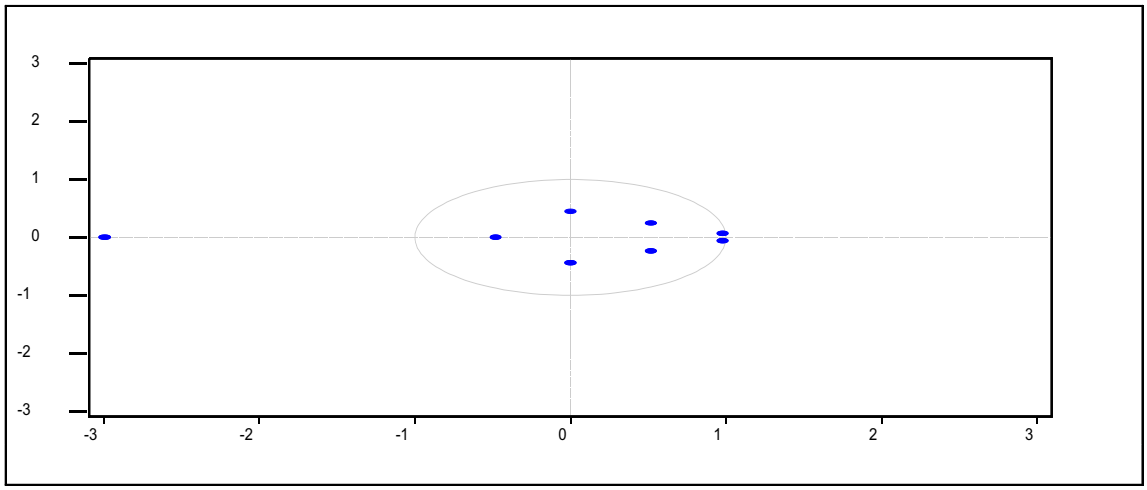
This test is carried out for the Toda and Yamomoto specifications between the insurance intermediation operation and Penetration. Table 4.14 reports the test of LM serial correlation for the relation between insurance intermediation operation and penetration.

Table 4.14 Showing LM Serial Correlation Test for Insurance Intermediation Operation -Insurance Companies' Penetration Nexus

Lags	LM-Stat	Prob
1	11.44917	0.7809
2	37.54381	0.0018
3	22.81879	0.1187
4	13.61788	0.6272
5	22.09401	0.1402

Source: Author's computation from E-view Output (2019)

The study examined the LM statistics up to lag 5 and the statistics appear to be very small; while the corresponding p-values are respectively larger 5 percent. In view of this, the null hypothesis of no serial correlation cannot be rejected. The residuals are independently spread. The test for ergodicity is carried out by computing the root of the AR polynomial and it is shown in the figure below.



The root of the polynomial is the blue dots where some are found within the unit cycle and some marginally lies on the cycle. Since the modulus or the polynomial root is less than 1 and is within the unit interval; the null hypothesis that the ARDL process is not stationary is rejected. Thus, the ARDL process for industrial out-banking factor specification is ergodic and the residual term for this system is reversible. Having established that the residual of the model is ergodic, the study conducts the cointegration test between the variable and the result is presented in the table 4.15 below;

Table 4.15 Cointegrating Factor

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Panel A				
None *	0.534198	46.78480	40.17493	0.0094
At most 1	0.278284	21.57296	24.27596	0.1056
At most 2	0.275729	10.81088	12.32090	0.0884
At most 3	0.005000	0.165411	4.129906	0.7365
Panel B	**Eigenvalue**	**Eigen Stat.**	**0.05 CV**	**Prob**
None *	0.534198	25.21184	24.15921	0.0359
At most 1	0.278284	10.76208	17.79730	0.4082
At most 2	0.275729	10.64547	11.22480	0.0631
At most 3	0.005000	0.165411	4.129906	0.7365

Source: Author's computation from E-view Output (2019)

As shown in table 4.5, the outputs of the trace test are reported in panel A, and those of the maximum Eigen test are presented in panel B. In the first raw of panel A, the trace statistic (121.7459) is larger than the 5 percent critical value (63.87610), meaning that the trace test rejects the null hypothesis that there is no

cointegration. However, in the second raw, the trace statistic (58.68158) is less than the critical value (62.91525), and as such the null hypothesis that there is only one cointegrating vector cannot be rejected. In an analogous vein, the null hypothesis that there is no cointegration is rejected in panel B based on the maximum Eigen value test. So also, the hypothesis of only one cointegrating vector is not rejected. Therefore, the trace and maximum Eigen tests unanimously consent that there is one cointegrating vector. This is also confirmed by the result of the probability values displayed in both panel A and B. This simply implies that there is strong evidence that insurance companies' growth in Nigeria and insurance intermediation operations correlate together in the long run. The nature of this long run relationship is shown in table 4.16, with emphasis on equation of preference.

Table 4.16: Dependent variable: PEN

Excluded	Chi-sq	df	Prob.
INV	3.574984	2	0.1674
CLAIM	0.218947	2	0.8963
PREM	0.041038	2	0.9797
All	9.959414	6	0.1264

Source: Author's computation from E-view Output (2019)

The result from the table shows that all p-values are insignificant at 5%. This implies that the null hypotheses that the excluded variables do Granger cause equation variables are not rejected with 95 percent confidence. Thus, it means that insurance penetration cannot be used in predicting the future behaviour of insurance investment, insurance claim and insurance premium.

4.4 Discussion of Findings

From the analysis, the study found that in the long run insurance investment will decrease significantly with increase in insurance companies' growth in Nigeria. This is does not conforms to the findings of Shan, Teng, Kai and Chuan (2016). The explanation for this is that most of insurance investments of the insurance companies in Nigeria are prone to higher level of risk which affects their growth negatively. The insurance claim has a negative but insignificant effect on insurance companies' growth in Nigeria. This is not in consonance with the findings of Shan et.al. (2016). The explanation for this is that most of the insurance claim affects the growth of the insurance companies in Nigeria. The study also found that insurance premium has a negative effect on insurance companies' growth in Nigeria. This is line with the finding of Shan et.al. (2016). Also, the study found that a decrease in insurance claim lead to increase in insurance companies' profitability. This conforms to the finding of Khan (2014). The explanation for this negative relationship is that an increase in the claim of policy holders are liabilities to insurance companies and this affects their profitability. The study found that insurance investment and insurance premium have positive effect on insurance companies' profitability respectively. This is in line with the findings of Khan (2014). The explanation for this is that the premiums paid by policy holders are invested in viable ventures and this increases the insurance companies' profitability. Furthermore, the study also found that insurance premium has no significant effect on insurance penetration but this contradicts the findings of Dan and Shome (2016). The explanation is that there is linear relationship between the insurance premium and insurance penetration. Thus an increase in insurance premium should result to increase in in the penetration of insurance companies in Nigeria. Also, the study found that their insurance investment and insurance claim have no significant effect on insurance penetration but this does not conform to the apriori expectation.

5.0 Conclusion and Recommendation

The study concluded that in the long run insurance investment will decrease significantly with increase in insurance companies' growth in Nigeria while the insurance claim and insurance premium have a negative but insignificant effect on insurance companies' growth in Nigeria. While previous insurance investment and insurance premium influence current insurance growth negatively. Hence, in the short run dynamic changes in the insurance claim could lead to positive changes in insurance growth. Also, the study concluded that insurance claim has negative short run dynamic influence on insurance profitability. The study concluded that insurance investment has negative short run dynamic influence on insurance profitability and insurance premium has a positive and significant short run effect on insurance profitability. More so, the study concluded that insurance penetration cannot be used in predicting the future behaviour of insurance investment, insurance claim and insurance premium. In line with the conclusion, the following

recommendations are made in this study: The management of insurance companies should ensure that optima combination of assets should form their portfolio. Also the management of insurance companies should involve in diversification of investment from riskiest sector to some risky free sector in order to enhance their performance. Also, the management of insurance companies should devise a control mechanism to enhance flexible payment of premium for the policies holders and develop new products to increase the market share of insurance companies in Nigeria as well as their performance among the non-financial institutions.

REFERENCES

Aliero, H. M. & Shuaibu, M. (2013). The prospects of micro-insurance in the rural areas of Nigeria. European Scientific Journal February edition 8(3).

Aslan, A. (2008). Testing Gibrat's Law: Empirical Evidence From Panel Unit Root Test of Turkish Firms. International Research Journal of Finance and Economics: D21, L11, L20.

Azizi, A. A. & Sidin S. M. (2008). Impact of environmental factors on export marketing performance in wooden furniture industry. Jurnal Kemanusiaan Bil.

Barney, J. (1986). Organizational culture: Can it be a source of sustainable competitive advantage? Academy of Management Review, 11, 656-665.

Barney, J. (1986a). Strategic factor markets: expectations, luck, and business strategy. Management Science, 32 (10), 1231-1241. 168

Barney, J. (1991). Firm Resources and Sustained competitive advantage. Journal of Management, 17 (1), 99-120.

Barney, J. B. & Arikan A. M. (2001). The resource-based view: origins and implications. In The Blackwell Handbook of Strategic Management, Hitt MA,

Freeman RE, Harrison JS (eds). Blackwell: Oxford, UK; 124–188.

Choi, B. P. (2009). The US property and liability insurance industry: firm growth, size and age. Sociology 6(1): 1-22.

Daniel, M. & Tilahun, A. (2013). Firm specific factors that determine insurance companies 'performance in Ethiopia. European Scientific Journal, 9(10).

Daniel, F. (2014). National Insurance Commission Report, on 10th November, 2014.

Daniel, F. (2015). National Insurance Commission Report, on 17th February, 2015.

Georgopoulos, B., & Tannenbaum, A. (1957), A Study of Organizational Effectiveness, American Sociological Review 22, 534-40

Hamadu, D., & Mojekwu, J. N. (2010). An investigation of Nigerian insurance stock option prices. Medwell Journals of International Business Management, 4(1), 1-8.

Hoopes, D., Madsen, T. & Walker, G. (2003). Guest editor's introduction to thespecial issue: Why is there a resource-based view? Toward a Theory of Competitive Heterogeneity. Strategic Management Journal, 24, 889-902.

Igbojekwe, A. (2006). Accounting for composite business and disclosure requirements. A paper presented in NIA/NASB Insurance Companies Compliance Workshop with NASB's. International Monetary Fund).

Irala L. R. (2007). Performance measurement using balanced score card. International Journal of Finance.

John R. (2010). The theories behind corporate governance, Judge Business School. Retrieved 16th June, 2011 from www.parcentre.com.

Kotler, P. (1998). Marketing management—Analysis, planning, implementation, and

control (9th ed.). Englewood Cliffs: Kotler, P. & Armstrong, G. (2008),

Principles of Marketing, 12th ed., New Jersey: Pearson Education Inc., Upper Saddle River,

Kruger, M. E. (2004). Entrepreneurial theory and creativity. University of Pretoria. http://upetd.up.ac.za/thesis/available/etd. Retrieved on 22nd January, 2014

Kunreuther, H. (2010). Performance measurement. Retrieved from 14th April, 2011 www.worldfinance.com/encyclopedia/articl e1500.html

Lalith, S. (2011). Determinants of firms' performance: some Chinese evidence. Investment Management and Financial Innovations Journal, Volume 8, Issue 3, 2011

Lee, J. (2009). Does size matter in firm performance? Evidence from U. S. public firms. International Journal of the Economics of Business, 16(2), 189 – 203.

Muhaizam, I. (2013). Determinants of Financial Performance: The Case of General Takaful and Insurance Companies in Malaysia. International Review of Business Research Papers 9(6) 111 – 130

National insurance commission (NAICOM) fact book, 2013

Park, K., & Sydnor, S. (2011, November, 3). International and Domestic Growth Rate

Patterns Across Firm Size. International Journal of Tourism Sciences, 11 (3), 91-107

Penrose, E. T. (1980). The Theory of the Growth of the firm. Oxford: Basil Blackwell ` Publisher, 2nd Ed.

Penrose, E. T. (1995). The Theory of the Growth of the firm. Oxford: Basil Blackwell Publisher, 2nd Ed. New York

Penrose, E. T. (1959). The Theory of the Growth of the Firm. England, Oxford University Press, Oxford. Rogers & Wright, 1998

Tang, A. (2013l). Does Gibrat´s Law Hold for Swedish Energy Firms, Dalarma University, SE- 791-88, Falun, Sweden.

United States Agency for International Development Strategy Report (USAID), 2006