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Insurance Industry Performance and the Selected Regulatory Instruments in Nigeria

Eugene Iheanacho, (Phd)
Department of Economics, Abia State University, Uturu. P.M.B. 2000, Uturu, Abia State, Nigeria.

Abstract: *This study examined the impact of selected regulatory instrument on the insurance sector performance in Nigeria. The study employed classical linear square technique for analysis of the data covering the period of 1981 to 2015. Data for the study were collected from CBN Statistical bulletin. Our results are in three-folds. First, liquidity ratio is found to exact negativebut insignificant effect on total insurance income. Second, loan to depositorsratio is found to exact negative and statistically influence on total insurance income. Third, minimum rediscount rate is found to exact significant impact on total insurance income. This findingshave some policy implications to the government, stakeholders and researchers. The government should benchmark for best practices in monetary policy development from those economies that are more advanced in order to develop better monetary policies that can improve the performance of the insurance industry indeed total income in the insurance industry.*

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I. Introduction

Insurance market is a substantial market. World over there are thousands of insurance companies with large volumes of capitalization and funds employing very large numbers of employees on one hand, and much larger numbers of people and business organizations which are covered by insurance benefits on the other (Majmudar and Diwan, 2005).

Going by the above platform upon which insurance operates, the discussion of regulatory mechanisms in insurance indicates that there are many avenues through which rate regulations may distort individual insurance premiums. Many of these mechanisms—including rate suppression, rate compression, and residual markets—change drivers' incentives in ways that lead to higher accident rates and higher average costs for the insurance system. However, additional regulatory mechanisms such as required safe-driving discounts may be used to mitigate these effects. Competitive responses of insurers that vary premiums with driving behaviors or claims history may also reduce or eliminate the distorting effects of rate regulations, if not prohibited by law. Thus, whether rate regulation results in any significant effects on insurance and loss costs is ultimately an empirical question. The extent to which regulation is observed to affect accident or death rates or loss costs depends both on the specific forms of rate regulation and on the sensitivity of driving and insuring behavior to insurance prices. The character and stringency of rate regulation varies among the states that regulate insurance rates. States in which rate regulation is more heavily focused on reducing premiums for high-risk insured's will introduce greater incentive distortions and should be expected to create larger impacts on accident or death rates and costs.

Several mechanisms might be used to make insurance rates affordable to the insured. Regulators may intervene in insurance markets to reduce premium levels for high-risk drivers, to limit average rate increases for all insured, and/or to reduce premium variation across individual. One widespread mechanism involves suppressing insurance premiums for the highest risk insured and financing these lower rates through surcharges to low-risk insured. This leads to high-risk insured paying less, and low-risk insured paying more, than they would under a purely cost-based pricing system. If only a small proportion of insured in a state are high risk, or if only a small proportion of high-risk insured receive a premium subsidy, then the distorting impact of regulated pricing is likely to be insignificant. Similarly, if subsidies paid to high-risk insured are just a small portion of low-risk insured premiums, incentive distortions for low-risk insured may be minimal.

On the other hand, it is possible that regulatory intervention will lead to premium pricing that is far removed from each insured's expected loss costs. In this case, the combined effects of regulatory incentive distortions may be substantial. To the extent that they are present in a market, some distortions to insured incentives that are created by regulated insurance pricing will have the effect of increasing the expected costs of insurance relative to a cost-based system of pricing. For example, if high-risk insureds' premiums do not reflect their higher expected accident costs, they may be expected to to purchase more insurance coverage (Blackmon and Zeckhauser, 1991; Harrington and Doerpinghaus, 1993). Similarly, because low risk insureds pay relatively

more for coverage they may be more careful and perhaps choose lower insurance limits. In combination, these changes to insuring decisions would lead to an insurance pool in which high-risk insured are more heavily represented and thus to higher average insurance costs.

Economic theory also predicts that the safety investments of all insured may be diminished when premiums are not fully based on accident experience (Shavell, 1982). Similarly, regulatory pricing that weakens the links between claim experience and insurance premiums may reduce the disincentives to filing fraudulent claims. These effects of regulation on safety and claiming decisions would lead to higher rates of accidents and claims and thus to higher average insurance costs. Research on other insurance markets such as workers compensation has documented a significant adverse impact of regulatory premium distortions on insurance costs.

Based on the fact that there are no exhaustive empirical evidence on the relationship between selected regulatory instrument and insurance industry performance in Nigeria, the researcher deemed it necessary to undertake a country specific research study to establish the relationship and interaction between selected regulatory instrument and insurance industry performance. This thus provides a major incentive for this study.

For Nigeria, this study will add to other studies on the subject matter and also fill any gap that may exist in previous studies which has been undertaken to establish whether there significant relationship between selected regulatory instrument and insurance industry performance. Therefore, the researcher extend the research with the inclusion of oil prices, inflation and exchange rate.

Previous related studies such as concentrated on investigating the empirical relationship between selected regulatory instrument and insurance industry performance in Nigeria. The findings of this study when added to the existing body of literature, will be a valuable guide especially policy makers and a good source of reference for future scholarly research. One advantage of academic research is that it investigates matters which practitioners and policy makers find useful but have little time to study. The study is very vital especially to policy makers and development partners because it enables them to initiate, develop and manage long term economic strategies based on empirical evidence.

This study contributes to the literature by examining the relationship between selected regulatory instrument and insurance industry performance indicators hence addressing the country's specific dimension to the insurance penetration debate.

The study is different from previous studies in scope that is in terms of number of years covered. This study will contribute significantly to knowledge by providing a new study evidence on the relationship between selected regulatory instrument and insurance industry performance in Nigeria.

To the body of academics, this study will serve as a guide for further researches in area of selected regulatory instrument and insurance industry performance which this study did cover.

II. Conceptual Framework

2.1Meaning of Insurance

The term insurance could be defined in distinct dimension, one can define it in legal context and the other might define in general context. Generally, Insurance is a social device for spreading the chance of financial loss among a large number of people. The act of purchasing insurance, imply a "person" shares risk with a group of others, thereby reducing the individual potential for disastrous financial consequences. Transacting insurance includes soliciting insurance, collecting premiums and handling claims. Insurance is based on the law of large numbers in the sense that a combination of large number of homogeneous units; the insurer is able to make predictions of possible loss, calculate their probable losses and establish the rates for premiums that will cover their losses and their operating expenses. Butt (1985:141) described that insurance involve covering against events that may or may not happen.

2.2 Theoretical Framework

2.2.1 Financial Performance of Insurance Companies

According to Kasturi, (2006) Performance of insurance company in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment, return on equity etc. Budget variances measure the financial performance of insurance company. This performance will include both financial and non-financial performance. Financial performance for a company with branches can be divided as profit performance and investment performance. These measures can be classified as profit performance measures and investment performance measures.

2.2.2 Market Correction and Distortion Theory

Market correction is meant to correct some inequalities in the market. The regulatory authority uses tools such barriers to entry, restricts insurers' risk and investment portfolios, and limits the products and terms they can offer. Legal restrictions on investments and other transactions, and price controls. Barrier to entry through regulation ensures the correct number to support the market development is ensured and there is no overcrowding which could result to unhealthy competition in the sector. However criticism against this move

could also restrict competition which denies the consumers additional alternative which lead to lower prices and quality product from alternative sources.

Further r this move could deny companies to invest in more lucrative and profitable ventures that could guarantee them more returns to meet their claims and obligation. Price regulation is advocated for it ensure fair price for the insurer and customer in promoting equity and avoid over exploitation. Policy terms and product restriction and approvals by the authority ensure right products are offered in the market and protects the interest of the policy holders. However criticism on restrictions on policy forms centers on limiting consumers' options and ability to purchase contracts that might better fit their needs and preferences. Hence the theory also falls short and inadequate as the reason for regulation of insurance industry and promoting their development. Despite having the shortcomings regulation was best suited to remedy certain market failures like high prices caused by other external forces, such as escalating claims costs. The purpose of regulation should be to correct market failures, and minimize their negative effects, and improve allocate efficiency (Spulber, 1988].

2.2.3 Market Efficiency Theory

This theory centre on factors that promotes and enhances the efficiency of the market such as the flow of information into the market and the adjustments of prices and or products as the information are received in the market. When there are few companies in the market operating as cartels or monopolists, consumers don't enjoy the benefits of fair price brought in by competition. The Regulator may relax new entry, licensing rules to allow more companies to enter the market thus promoting efficiency**.** Regulation has the potential to both increase and decrease consumer and producer surplus. When regulation corrects significant market failures, it potentially increases social welfare. For example, if regulation reduces insolvency costs and increases consumer confidence, and these "benefits" exceed other costs imposed by such regulation, then there should be a net addition to social welfare. On the other hand, when regulation restricts consumer choice and distorts market decisions and there is no commensurate benefit to consumers, then social welfare is reduced. A common goal of most of the regulatory efforts has been the strengthening of competition within the industry and as well as the lowering of prices and the improvement of product offerings. (Mahlberg and Url, 2003, for the EU single market program).

2.3.4 The Insolvency Danger Theory

Insolvency refers to the inability of the company to meet it contractual obligation on the insurance policies and contracts they have issued and entered into posing a great danger and threat to the insuring public and the industry as a whole. The insolvency danger theory, is therefore aimed on supervision on insurance companies in order to avoiding specific insolvency dangers which threaten the public and the individual as a result of insurance company collapsing and destabilizing the industry. The solvency monitoring seriously decreases the likelihood of insolvency and preserves the ability of monitoring agencies to provide early warning of problems (Mayerson, 1969).

2.3.5 The Protection Theory

The protection theory attempts to deal with the arguments that assumes supervision law is a part of industrial and industrial policing law that is meant to protect the companies from assuming risks that can destroy them leading to their collapse and at the same time protecting the interest of customers and the public at large as a function of supervision and directing the industry.

2.4 **Empirical review**

At the forefront of regulation and the insurance market are (Harrington, 1991, 2002; Grace, Klein, and Phillips, 2002; Tennyson, Weiss, and Regan, 2002; Derrig and Tennyson, 2008). This article uses a panel of annual state-level data on automobile insurance markets to investigate whether distorting insurance prices through rate regulation has a significant impact on automobile insurance loss costs and claim frequency. Insurance claim frequency is examined in addition to loss costs because some of the incentive distortions hypothesized to be created by rate regulation should affect loss costs largely by affecting automobile accident frequency. The sample period of the study encompasses the years 1980 through 1998, a nearly 20-year period that saw many changes in state regulatory regimes—both toward deregulation and toward regulation—and during which the stringency of rate regulation changed in many countries. Two sets of analysis are conducted. First, an analysis of all 50 states is conducted to determine whether the presence of rate regulation is associated with higher loss costs and higher insurance claim frequencies. An indicator variable is used to denote whether a state actively regulates automobile insurance rates in each state and year. The analysis uses estimation methods that recognize that a state's decision to regulate rates in this fashion may be influenced by the level of accident rates or loss costs.

Ghai (1986) conducted a study to examine the Government control and industrial growth experiences of Sudan and Tanzania in attempting to control their respective insurance industries to serve their development. The findings revealed that the socio-political chemistry in each country has produced a certain policy towards the insurance institution. The Sudan opted to control its industry through a regulation code; Tanzania in early stages adopted nationalization as an ultimate form of control. The study tried to examine the respective roles of the two regulation models in the insurance development process, and the findings and arguments are that direct model of insurance control such as in Tanzania is more appropriate to the needs of underdeveloped countries than a regulatory model of the Sudanese type. This conclusion derives from the need to avoid the problems which afflict the regulatory model such as the technical difficulties which involves the weakness of the regulation agency vis-a-vis the industry, the difficulty of monitoring solvency, and of enforcing investment regulations. In theory, the state is also more capable of protecting the public which seeks insurance cover from its own institution than when cover is purchased from private insurers. Most information relates to the period 1970-1977, and the study is largely based on fieldwork research in the Sudan and Tanzania and on secondary resources.

Lee (1999) conducted a study on the relationship between the development of the life insurance and market (using penetration and density measures) and factors such as price, product, and regional conditions. Generalized Method of Moments (GMM), for dynamic models of panel data for 60 countries from 1976-2005. The conditional variables consist of prices, products, and regional conditions. What we find is an interesting piece of evidence that the development of the life insurance market is influenced by pricing, product demand, and regional conditions such as urban areas and where wealthy class of people lives and has a positive effect on insurance premium income and revenue as factors which promote its growth.

Seth (1999) study on Economic theory and regulation of insurance companies argues that economic theory has often understood efforts by government to monitor and regulate the solvency of insurers as a solution as a collective action problem in the industry. View are supported by winter in his studies regarding financial institutions and intermediaries regulation and control on their operations (Winter, 199b).

(Hansmann, 1985) work and study on motivation of Regulatory authorities on insurance. His study argues and find out that insured customers are like fixed-debt investors putting money into insurers who reinvest that money and return sums to the insured in the event certain events come to pass . Given the incentive of insurers with limited liability to invest in high risk ventures, however, the likelihood of repayment is hardly assured. This motivates Regulatory Authorities or government heavily to regulates the business of insurance in order to protect the interest of the investors and policy holders.

Schmalensee (1984), studies on insurance efficiency and pricing, argues that insurers may develop a separation program-price discrimination between the low risk insured and high risk insured to promote efficiency through the pooling of risks. This works in unregulated market in favor of separation but criticism as suggested by Abraham (1986), separation techniques that examine characteristics such as race or gender that may have no causal relationship to expected loss and difficult-to-observe factors that indeed determine loss. In theory, the unregulated market equilibrium described above operates by establishing different pricing terms for identical contracts and achieves separation through verification mechanisms that reliability and validly classify individuals by risk.

O'Brien (2002) concentrated his study on an insurer's efficiency and out put measurement, namely its ability to produce a set of outputs (such as premiums and investment performance) from given inputs (such as administrative and sales staff and financial capital). He conclude that an insurance company would be technically efficient if it can reduce its resource usage without some corresponding reduction in outputs. Studies by (Mayers and Smith (1982), choose to measure company performance associated with profits reported by long-term insurers, Mayers and Smith (1982), for example, utilize an operating-income variable (defined as income before taxes and dividends to policyholders) as well as annual growth in premiums. Their finding reveals companies with high profits are good performance and vice versa and well managed.

III. Research Methodology

3.1sources And Natures Of Data

To carry out this empirical analysis, the study employed secondary data. The relevant data for this study have been obtained from the Central Bank of Nigeria (CBN) Annual report and statement of account and Central Bank of Nigeria (CBN) statistical bulletin covering the period between 1981 to 2015. The study was based on time series data collected on annual basis from the period. The data set was tailored to the need of the empirical framework and it contained information on economic variables such as credit to private sector (CPS), which captures bank performance from the perspective banking development in Nigeria. The regulatory instrument are; Minimum rediscount rate (MRR), Liquidity ratio (LQR), Cash reserve ratio.This study adopts ordinary least square (OLS) analysis to examine the effects selected regulatory instruments on the bank performance in Nigeria.

3.2 Model Formulation And Specification

Koutsyannis (2001) articulated that model specification is the formulation of a maintained hypothesis. This involves expressing the model to explore the economic phenomenon empirically. The linkage between capital market and economic growth has occupied a central position in the development literature. In examining this on Nigeria's data, the study, the neoclassical growth method, otherwise referred to as the growth accounting framework, to explain the source of growth in an economy.

To determine the relationship between the explained and the explanatory variables of this study, the model for the study is specified and the function capturing them is initially stated as:

IIP= (SRI) (1)

Where: BIP = Insurance Industry Performance serving as the dependent variable and is proxied using total income from various classes of insurance, and SRI = Selected regulatory instrument representing the explanatory variables proxied using minimum rediscount rate (MRR), Liquidity ratio (LR) and cash reserve ratio(CRR) . Based on the variables specified, the final regression model for testing the hypotheses and ascertaining the empirical results of the study are stated as:

$$IIP_{it} = \alpha_0 + \alpha_1 MRR_{it} + \alpha_2 LR_{it} + \alpha_3 CRR_{it} + \varepsilon_{it} \quad (2)$$

Where: αo represents the constant or the intercept of the model; α1-α3 : represents the coefficients of the explanatory variables to be estimated in the model; i : denotes the individual sampled bank; t : is time-period; while εit is the stochastic error term or disturbance for insurance i at time t.

3.3 Technique Of Data Analysis

In order to ascertain the degree of relationship that exist among variables, we specify a linear equation model and apply the econometric ordinary least square (OLS) technique to ascertain the level of economic relationship which exist between the dependent variable and the independent variables. The OLS techniques are used extensively in regression analysis primarily because it is intuitively appealing and mathematically much simpler than other estimators.

The OLS technique is used because its estimator possesses BLUE characteristics in that, in it is the best linear unbiased estimators (BLUE) in the class of all other estimators. This makes it desirable for this study. Moreover the OLS is relatively simple and software for use is readily available such as eviews. Beside data requirement is also minimal and researcher on other field easily understand it. Co-efficient of determination, F-Statistics, t-statistics, statistic error test, unit root test, Durbin Watson test are used to evaluate the significance of the estimated parameters of the regression model

A Priori Expectation

The following linear equation is obtained from the specified model.

IIP = B_0 < B_1MRR <B_2LIQ <B_3CRR <et.

B0, B1, B2, B3 and B4 are the parameter to be estimated while et is the error term. It is expected that increase/higher MRR, LIQ and LTD resulted in inverse relationship with insurance performance captured with total income from all classes of insurance within the period under review.

Thus, the apriori expectation becomes

B1 < O B2 < O B3 < O

Based on apriori therefore, the sign of b0, b1, b2 and b3 are expected to be negative sign. This is because with total income from all classes of insurance is expected to increase as the explanatory variables decreases vice versa.

3.4.3 Evaluation Base On Statistical Criteria (First Order Test)

Correlation Coefficient (R)

Ogwuru (2014) hypothesized that correlation co-efficient denoted by R, is defined as the measure of the degree of or extent of linear relationship between two co-efficient takes value ranging from -1 to +1. Point chosen to -1 means absence of correlation between the variables, while point tending towards +1 show the presence of correlation between the variables,

Again, Ogwuru (2014) emphasized that the R is calculated as:

$$\frac{\cap \sum \times \gamma - (\sum \times)(\sum \gamma)}{\sqrt{\cap \sum X^2 - (\sum \times)^2}\sqrt{\cap \sum \gamma^2 - (\sum Y)^2}}$$

Where:

X= derivation of x from its mean

Y = derivation of y from its mean

Coefficient Of Determination (R^2)

Agugua (2014) emphasized that in order to determine how our model provides a good fit for the data, we calculate the coefficient to determination R^2, which measure the percentage of the variation in Y accounted for by the change in x.

$$R^2 = \frac{B_1 \Sigma \times_{1Y} + B2 \Sigma \times 2Y}{\Sigma Y^2}$$

Adjusted Coefficient Of Determination $\bar{R}^2$

This is used to confirm the validity of the goodness of fit with respect to the sample observation x and y.

Test Of Significance Of Parameter Estimates

In order to confirm the validity of the result obtained using the formulated methods of analysis discussed so far, the result will be subjected to the following tests on significance.

i. The standard error test
ii. The student t-test
iii. The f-test

Standard Error Test

Koutsoyannis (1977) emphasized that this test enables us to determine whether or not of the parameter estimates of the economic model is significantly different from zero, whether the sample from which they are estimated might have come from a population whose parameters are zero (such that b0=0, b1=0).

Decision Rule: If the standard error of the parameter estimates is smaller than the numerical value of the parameter estimate (ic) if S (b1) < b1½ it is statistically significant.

Student T-Test

Ogwuru (2014) also explained that T-test is a test for significant. It is the basis for accepting or rejecting hypothesis. This test is carried out to know the significance of individual explanatory or independent variable in the model. That is to test whether the variable have strong impact in determining the economic development. In this case, if the value of the t-statistics obtained from the regression result for a particular variable is 2 or above; using 2-t rule of thumb, it means that the variable is statistically significant and has a very strong effect on the dependent variable statistically.

Conversely, if the value of the t-statistics is less than 2, it means that the variable is in significant and does not have any statistical impact on the dependent variable.

Hypothesis

H0: B1=0 (The estimated parameters are statistically insignificant)

Decision Rule

Reject H0 if (t_{cal}) > (t_{tab}), do not reject otherwise

The F-Test

This test is employed to ascertain the overall significance of the model. If the value of the f-statistics from the regression result exceed the calculated f-value from the f-distribution table, then the model is statistically significant and if otherwise, it is statistically insignificant.

Hypothesis

H0=B1=B2=B3=0 (The model is insignificant)

Decision Rule

Reject H0 if /f_{cal}/ > /f_{tab}/, otherwise do not reject H0.

3.4.5 Evaluation Based On Econometric

Auto Correlation Test

The essence of this test is to see whether the errors corresponding to different observations are inter-correlated or not. Uncorrelated errors are desirable symbolically that is denoted as E (U1) = 0. Durbin Watson (Δ test) would be used for this analysis.

Normality Test

This test was carried out to check whether the error term follows the normal distribution. The normality test adopted is the **JARQUE-BERA(JB)TEST OF NORMALITY.** The JB test of normality is an asymptotic, or large-sample, test and it is based on the OLS residuals. This test computes the skewness and Kurtosis measures of OLS residuals and uses the chi-square distribution (Gujarati, 2004)

Hypothesis: Test

Ho: ∑i= 0 (the error term follows a normal distribution)

Against:

H1:∑i≠ 0 (the error term does not follow a normal distribution)

3.4.6 Test For Heteroskedasticity

This test basically focused on the variance of the error term. The test helps to ascertain whether the variance of the error term is constant.

H_0: Homoskedasticity

H_1: Heteroskedasticity

Decision Rule: Reject H_0 if $x^2 > x^2_{o.o5}$ and accept if otherwise.

IV. Data Presentation And Analysis

Table 3:

Dependent Variable: LINS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLIQ	-0.062432	0.313055	-0.382720	0.7045
LLTD	-0.659119	0.356417	-1.968602	0.0580
LMRR	-0.730701	0.220540	-3.333173	0.0022
C	7.689645	2.287635	3.361395	0.0021
R-squared	0.776644	Mean dependent var		2.454335
Adjusted R-squared	0.766642	S.D. dependent var		0.425466
F-statistic	3.951933	Durbin-Watson stat		1.815471
Prob(F-statistic)	0.016980			

Source: eviews calculation

4.3.1 Result Intretation And Evaluation

From the above, the interpretation of the result as regards the coefficient of various regressors is stated as follows: Adjusted R-square is 76% shows that the model was correlated by the explanatory variables.The value of the intercept is 7.2691; it shows that insurance performance will experience a 7.26% increase when all other variables are held constant. The estimate coefficients which are -0.0624 {LIQ} shows that a unit increase in Liquidity ratio will cause a -0.0624% decrease in bank performance (CSP), -0.65911% {LTD} shows that a unit decrease in loan to deposit will cause a -0.65911% decrease in bank performance (CSP), -0.7307 {MRR} shows that a unit change in minimum rediscount rate will cause a -0.7307% % decrease in insurance performance (CSP). The F-statistics is used to test for simultaneous significance of all the estimated parameters. The hypothesis is stated; H0: β1 = β2 = β3

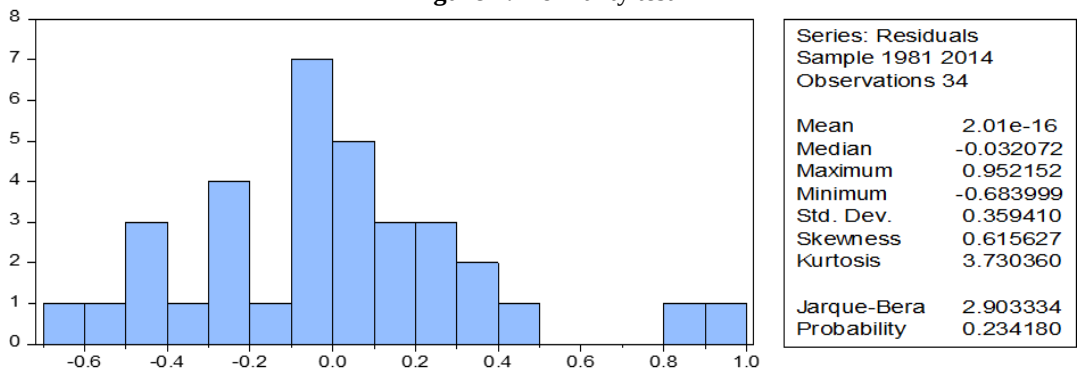
H0: β1 ≠ β2 ≠ β3 Level of significance = at 5%

Degree of freedom: V1 = K -1 V2 = N-k

Decision rule: If the f-calculated is greater than the f-tabulated {f-cal> f-tab} reject the null hypothesis (H0) that the overall estimate is not significant and conclude that the overall estimate is statistically significant. From the result, f-calculated {3.8453} is greater than f-tabulated {2.92}, that is, f-cal> f-tab. Hence, we reject the null hypothesis {H0} that the overall estimate has a good fit which implies that our independent variables are simultaneously significant.

Normality Test For Residual

Figure 1: Normality test



Source: eviews

The Jarque-Bera test for normality is an asymptotic, or large-sample, test. It is also based on the ordinary least square residuals. This test first computes the skewness and kurtosis measures of the ordinary least square residuals and uses the chi-square distribution {Gujarati, 2004}. The hypothesis is: H0 : X1 = 0 normally distributed H0 : X1 ≠ 0 not normally distributed At 5% significance level with 2 degree of freedom.
JB=2.90933
Critical value =5.9914

V. Conclusion:

Since 2.9093 < 5.99147 at 5% level of significance, we accept the null hypothesis and conclude that the error term follow a normal distribution.

Test For Heteroscedasticity:

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.664776	Prob. F(3,30)	0.4657
Obs*R-squared	7.153887	Prob. Chi-Square(3)	0.5672
Scaled explained SS	7.603554	Prob. Chi-Square(3)	0.1550

Sources: eviews

Heteroscedasticity has never been a reason to throw out an otherwise good model, but it should not be ignored either. This test is carried out using Breuch-Pagan-Godfey general heteroscedasticity test. The test asymptotically follows a chi-square distribution with degree of freedom equal to the number of regressors {excluding the constant term}.

The auxiliary model can be stated thus: Ut = β0 + β1 LMRR + β2 LIQ + β3LTD + vi Where Vi = pure noise error.
This model is run and an auxiliary R2 from it is obtained.
The hypothesis to the test is stated thus:
H0: = β1 = β2 = β3 = 0 {Homoscedasticity}
H0: = β1 ≠ β2 ≠ β3 = 0 {Heteroscedasticity}

Note: the sample size {n} multiplies by the R2 obtained from the auxiliary regression asymptotically follows the chi-square distribution with degree of freedom equal to the number of regressors (excluding constant term) in the auxiliary regression.

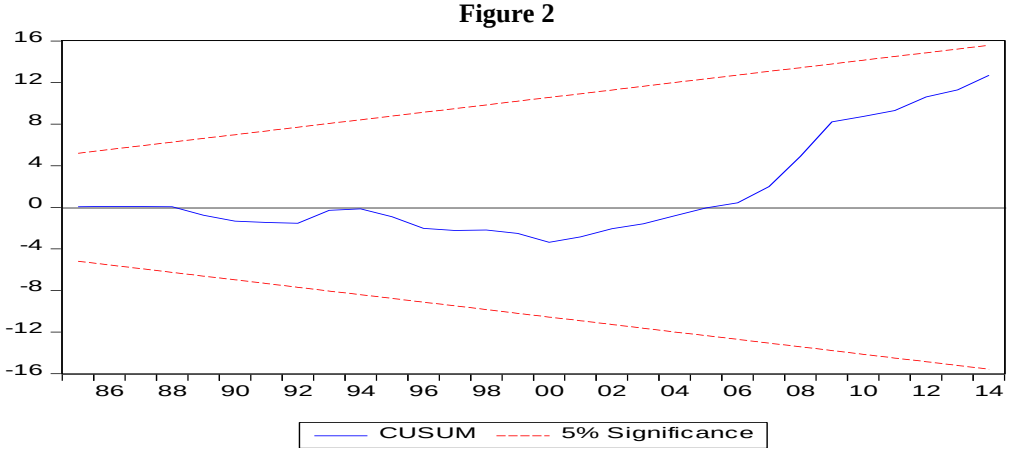
Decision Rule:

Reject the null hypothesis if X2 cal> X 2 at 5% level of significance. If otherwise, accept the null hypothesis, from the obtained results, X2 cal = 7.15388 < X2 tab at 0.05 significance level {8} = 15.5, we therefore reject the alternative hypothesis of heteroscedasticity showing that the error terms have a constant variance and accept the null hypothesis showing that the error terms does not have a constant variance.

Stability Test

The cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) tests are applied to assess parameter stability (Pesaran and Pesaran, 1997). Figs. 2 plot the results for CUSUM and CUSUMSQ tests. The results indicate the absence of any instability of the coefficients because the plot of the CUSUM and CUSUMSQ statistic fall inside the critical bands of the 5% confidence interval of parameter stability.

Figure 2



Source: eviews

4.6 Discussion of Findings

From the result, the algebraic signs and magnitudes of the estimated parameter to determine the extent and directions of the influences of the several independent variables on the dependent variable is given thus;

(a) Since the coefficient of liquidity is – 0.0624**,** it implies that a change in the liquidity ratio by 1 % will result by the same margin to a fall in the level of total income to insurance companies. This goes to agree with theoretical expectation that an increased liquidity ratio reduces the amount of private sector income.

(ii) Since the coefficient of loan to depositors ratio is -0.659, a **1** % change in the variable will result in a rise than 1 % change in income to insurance market.This conforms with theoretical expectation that loan to deposit rate of commercial banks vary with the endogenous variable (credit to private sector) directly or negatively.

(iii) **A** reduction in the minimum rediscount rate means more credit to be channelled to borrowers. This would be made possible as the insurance companies would have more liquidity to be extended because potential insured would increase. The implication is that more policies would be extended to the populace if the discount rate is less and more if the rate is reduced.

In sum,the results suggest that regulation that is designed to enhance insurance affordability for some drivers may lead to higher average costs and accident rates overall. Of course, rate regulation that suppresses insurance premiums or redistributes insurance costs may fulfill important social or political goals not measured in our analysis. For example, if premiums are lowered for higher risk drivers, previously uninsured drivers may choose to purchase coverage, eliminating externalities associated with uninsured driving (Smith and Wright, 1992; Jaffee and Russell, 1998). Thus, our results cannot be interpreted to suggest that

VI. Summary, Policy Recommendation And Conclusion

5.1 Summary Of Finding

The main objective of this study was to examine the impact of selected regulatory instrument on the banking performance in Nigeria. Being an empirical study, an econometric model was derived in line with economic theory. The examination was done using OLS technique over the period of 1981 to 2015 to ascertain the significant impact of regulatory instrument on insurance sector performance in Nigeria.

Our empirical findings support that regulatory instruments are a significant component of the banking performance in Nigeria. This finding can be identified in the T-test (T-statistics). The findings are as follows

1. Liquidity ratio was found to be statistically insignificant at 10% level. Following the aprior expectation, the parameter of liquidity ratio, a negative relationship which exists between insurance sector indicates that a decrease in liquidity ratio will result in a positive change in insurance performance in Nigeria.

2. Loan to depositors was found to statistically significant at 5% level. Following the aprior expectation, the parameter of loan to depositors, a negative relationship which exists between insurance performance (premium) indicates that an decrease in , liquidity ratio will result in a positive change in credit to insurance performance in Nigeria.

3. Minimum rediscount rate was found to statistically significant at 5% level. Following the aprior expectation, the parameter of minimum rediscount rate, a negative relationship which exists between insurance performance indicates that an decrease in , minimum rediscount rate will result in a positive change in insurance performance in Nigeria.

5.2 Policy Recommendations

Based on the findings made in the course of this study, particularly the results of the regression models, it is clear that the development of the Nigerian economy is highly dependent on the provision of the right environment for investment, which will in no doubt encourage economic growth and development. The following recommendations are hereby made:

(1) Regulatory policies should be used to create a favourable investment climate by facilitating the emergency sound insurance operation that will attract both domestic and foreign investments clients. In order to strengthen the non-financial sector, NAICOM has to encourage the introduction of more insurance products that are flexible enough to meet the risk preferences and sophistication of operators in the financial sector.

(2) The government should also endeavour to make the financial sector less volatile and more viable as it is in developed countries. This will allow for smooth execution of the Central Bank monetary policies and NAICOM. Law relating to the operation of the financial institutions could be made a bit less stringent and more favourable for the operators to have room to operate more freely.

5.3 Conclusion

A study of government's role in the financial sector has been given much attention in the literature and there has been mixed feelings on the direction of the impact of selected regulatory instrument in the banking performance. Although, we can conclude that the insurance sector will do better with active regulatory instruments in order to improve the non-financial sector performance, as well as create incentive for insurance reform that will be determinate to the economy in the future.

5.4 Recommendation

The study has also revealed that the monetary policy generally has a significant effect on the insurance sector. It will be important if the government will enact sound monetary policies in order to enhance growth in the insurance industry. The government will also need to benchmark for best practices in monetary policy development from those economies that are more advanced in order to develop better monetary policies that can improve the performance of the banking industry indeed credit to private sector.

5.5 Conclusion

The increases in loss costs and claim frequency associated with regulation are relatively small when evaluated at the mean of the sample. However, these estimates understate the impact of rate regulation in the most stringently regulated states. Given the large variation in average loss costs, claim frequency, and regulatory stringency across the states, our estimates suggest a sizable effect of rate regulation or a larger residual market size on loss costs and claim frequency in some states. This is consistent with the findings of previous studies that the effects of regulation are relatively small on average but are large in the most heavily regulated states, and with the results found in case studies of certain highly regulated states. Some prior research using the loss ratio as a measure of the price of insurance suggests that over the long term the effect of regulation on premiums per dollar of losses washes out (e.g., Harrington, 2002). Our results taken together with prior research, then, indicate that premiums in regulated country like Nigeria must increase to cover increased loss costs. Otherwise, if premiums did not increase to cover higher loss costs, price measures based on the loss ratio would decline over time. Thus, rate regulation designed to increase insurance affordability for some drivers appears to lead to higher average costs overall.

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