Impact of Liquidity Management on the Performance of Insurance Companies in Nigeria

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Abstract: *The study investigated the impact of liquidity management on financial performance of insurance companies in Nigeria between 2003 and 2012. The study made use of variables such liquid asset, equity capital, dividend, working capital, investment, under-writing risk and size of the firm in the model. Return on asset ROA is used as the dependent variable and it measures the financial performance. Panel Regression analysis was adopted to estimate the model and the results showed that liquidity management has not been having significant impact on insurance company's performance like equity management which affects long term stability. Again, both investment and working capital are shown to have significant positive impact on financial performance of insurance companies in Nigeria. It is recommended that insurance companies should place more priority on their equity capital which is having negative impact on their performance rather than liquidity management since they are less involved with liquid cash unlike commercial banks.*
Keywords: *Liquidity management, Financial Performance, equity capital*

I. Introduction

Primarily, the liquidity management duty is to determine the needs for funds to meet financial obligation and ensure the availability of cash or collateral to fulfill those need as at when due, this is done by coordinating the various sources of funds available to the institution under normal and stressed conditions. It relies on the daily assessment of the liquidity conditions in the insurance system, to determine its liquidity needs and thus the volume of liquidity to allot from the market. Management of liquidity involves a daily analysis and detailed estimation of the size and timing of cash inflows and outflows over the coming days and weeks to minimize the risk that savers will be unable to access their deposits in the moment they demand them. Thus, liquidity is lifeblood of an insurance system.

The problem of insufficient studies of the assessment of the relationship between liquidity management and the performance of Insurance companies in Nigeria calls for more work under the subject matter. The assessment of liquidity management in relation to performance becomes imperative as a result of Insurance Market Review in 2009. The National Insurance Commission (NAICOM) makes it important to examine the management of liquidity in Insurance companies in Nigeria. Theoretical studies and empirical evidence have shown that countries with better developed financial system enjoy faster and more stable long-run growth of which insurance companies contribute to. Well-developed financial markets have a significant positive impact on total factor productivity, which translates into higher long-run development. Based on Solow's (1956) work, Merton (2004) noted that due to the absence of a financial system that can provide the means of transforming technical innovation into broad implementation, technological progress will not have significant and substantial impact on the economic development and growth. Therefore, the studies on the relationship of liquidity management and performance especially in insurance companies is not conclusive and more empirical evidences are needed to establish the sources of insurance liquidity and identify the strategies adopted by insurance companies in the management of liquidity, the relationship that exists between the sources of insurance liquidity and performance. This study attempts to contribute empirically to this gap in literature.

II. Literature Review

Patrick A. A. and Florence M. (2005)assessed the influence of risk management practices on financial performance of life assurance firms in Kenya. Census sampling method was used. Questionnaires were used for data collection. The data was analyzed using descriptive statistics which involved the use of percentages, frequency tables and regression equations. The findings of this study were beneficial to both the life assurance prospects and management as they helped interpret performance of. The study recommended that the management on insurance firms should consider adopting premium valuation methods to ensure financial performance of life assurance firms in Kenya.

Andrew O A.andOsuji C.C. (2003) examined the efficacy of liquidity management and banking performance in Nigeria. Profitability and Return on Capital Employed (ROCE) were adopted as our performance indicators or dependent variables. The research design was survey design, accomplished through the administration of structured questionnaires. Data obtained were first presented in tables of percentages and pie charts and were empirically analysed by Pearson product-moment correlation coefficient (r). Findings from the empirical analysis were quite robust and clearly indicate that there is significant relationship between efficient liquidity management and banking performance and that efficient liquidity management enhance the soundness of bank. These findings which may have re-echoed results from similar researches re-emphasized that efficient liquidity management have important policy implications for developing and emerging economies. Considering the systemic consequences of liquidity problems, it was recommended that a more professional approach should be taken in its management.

Shafana(2003) examined the degree and pattern of determinants of liquidity on profitability of financial institutions in Sri Lanka for the period from 1989 to 2000. The study covers 16 Banks and Finance Companies listed on the Colombo Stock Exchange. For these objectives, the study used Cash Position Indicator (CPI), Capacity Ratio (CR) and Total Deposit Ratio (TDR) as independent variables to measure the liquidity level to examine its determinants on Return on Assets (ROA) of financial institutions in Sri Lanka. The correlation and regression model were used as statistical tools for hypotheses testing to draw final conclusions. The findings revealed that CPI and TDR have significant determinants on ROA with sign of positive and negative respectively while CR has insignificance on ROA of Banks and Finance Companies in Sri Lanka. The overall finding from regression model is that 30% of variation in profitability (ROA) is explained by variation of liquidity of Banks and Finance Companies in Sri Lanka. Further, the liquidity has negative and significant impact on profitability of financial institutions in Sri Lanka. The finding is more useful to finance decision makers of financial institutions for taking sound decisions on proper trade-off between liquidity and profitability.

Daniel M. and Tilahun A. (2002) investigated the impact of firm level characteristics (size, leverage, tangibility, Loss ratio (risk), growth in writing premium, liquidity and age) on performance of insurance companies in Ethiopia. Return on total assets (ROA) - a key indicator of insurance company's performance- was used as dependent variable while age of company, size of the company, growth in writing premium, liquidity, leverage and loss ratio are independent variables. The sample includes 9 insurance companies over the period 1990-2000. The results of regression analysis revealed 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.

Olajide S. F. (2001) examined challenges and opportunities associated with corporate governance and insurance company growth. The study is an empirical design using the responses of survey, structured questionnaires, of 112 respondents. Pearson product coefficient of correlation(r) is employed for data analysis and hypotheses testing. The findings revealed that good corporate governance promotes safe and sound insurance practice; effective supervision promotes good corporate governance; and the new code of good corporate governance for the Nigerian insurance industry enhances insurance companies' growth in Nigeria. The implication for practice suggests that effective corporate governance is necessary for proper functioning of insurance companies in order to promote growth and secure public confidence. The paper highlights the fact good corporate governance practices can enable the Nigeria insurance industry to generate more resources to create more employment opportunities and support the economy by way of prompt claims settlement.

Oke, M. O. (2002) examined the short and long-run relationships between economic growth and insurance sector development in the Nigerian economy. The fixed-effect model was adopted and relevant data within the period of 1985 and 2000 were collected and analysed with the use of co-integration analysis. Gross domestic product (GDP) was adopted as a proxy for the level of economic growth, while numbers of insurance companies (NIC), premium of life-insurance (PLI), premium of non-life insurance (NLP), total insurance investment (TII), and inflation rate (INF) were used in measuring insurance sector growth. The findings revealed that insurance sector growth and development positively and significantly affects economic growth. The coefficient of multiple determinations denoted as R2 with a value of 0.87 showed that about 87% variation in the dependent variable was explained by the explanatory variables while the remaining 13% was explained by the stochastic variables. The result of the Granger causality test also revealed that the extent of influence the insurance sector growth had on economic growth was limited and not direct because of some cultural, attitudinal traits and values in the country. It was recommended that government should create a good environment for insurance activities in Nigeria. The insurance companies should also engage in insurance business that is environment and customer friendly, as well as, formulating insurance policies that can accommodate every sector and segment of the economy.

III. Methodology

The research method adopted for this study is purely secondary in nature. Data from the annual reports of the selected insurance companies are used. However, this section of the paper discusses the population and the sample, the model specification and the estimating technique or method of analysis.

Population and sample

The whole insurance industry in Nigeria is the population ofour study but due to the challenge of data availability 5 out of the Nigerian insurance companies that are quoted on the Nigerian Stock Exchange NSE are used in the study. This enabled us have access to their annual reports from the NSE through which the data for the study are extracted.

Model

Based on the literature review for this research work, and leveraging on the empirical studies of Daniel M. and Tilahun A. (2003); Shafana (2003), The general form of the model shows that Return on asset ROA is used as measure of financial performance of the insurance companies. The model is specified as follows:

$$ROA_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 logDVD_{it} + \beta_3 logEC_{it} + \beta_4 logINV_{it} + \beta_5 logUWR_{it} + \beta_6 WC_{it} + \beta_7 logSIZE_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..\dots(3.1)$$

From equation 3.1 Return on assets (ROA) is used as a dependent variable while liquidity LIQ, dividends DVD, equity capital EC, investments INV, underwriting risk UWR, working capital WC and size of the firm SIZE are the independents variables.

Estimating technique

The technique adopted for the estimation of the model is panel data analysis. This estimating technique is used to examine the impact of liquidity management and other variables in both models on the financial performance of the companies. The procedure for the panel data analysis is divided into two which are the Panel unit root test and the panel model estimation.

Panel unit root test

The panel unit root test explores the data characteristics of the panel before proceeding to the panel model estimation.. The idea here is to test for stationarity of each variable used in the study. According to Engel and Granger (1997) a variable may not be stationary but a linear combination of the non-stationary variables maybe stationary hence the need for cointegration. The method of panel unit root test adopted for this study is Im, Pesaran and Shin(IPS) test. The test has been proven to be suitable in verifying stationarity of variables in panel data (see Im, Pesaran and Shin,2003;Maddala and Wu,1999). The basic ADF specification is given by:

$$\Delta y_{i,t} = \alpha y_{i,t-1} + \sum_{j=1}^{p_i} \gamma_{ij} \Delta y_{i,t-j} + \beta_0 + \beta_1 t + \beta_1 x_{i,t} + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.3)$$

Where, β_0 is the constant, $x_{i,t}$ represents the explanatory variables, $\Delta y_{i,t}$ is the explained variable, $\beta_1 t$ is a time trend and p_i is the required lag length. The null hypothesis to be tested for the ADF is $H_0:\alpha_i=0$, for all 'i's while the alternative hypothesis is $H_1:\alpha_i<0$, for at least one i. The lag lengths are selected using the Akaike Information Criterion.

Panel data regression

The study shall adopt the panel data regression analysis to analyze the impact of liquidity management on the performance of the companies. The condition for using the method is the all the variables must be stationary before the application of panel data regression

Sources of data

As earlier discussed, the major source of data for this study is the annual reports of the selected insurance companies. All the variables needed for the analysis are extracted from their respective annual reports.

IV.   Result and Discussion

Panel Unit Root Test

Non-stationary time series data pose some challenges in regression results. It is important to check the properties of time series data before analyzing the relationships that exist among the variables. It has been well established in the literature that unit root (not stationary data) will normally produce spurious regression results. To avoid spurious regression result, unit root test was carried out on all the variables used in this study in order to know their properties. To determine the order of the series, that is, in testing for stationarity of the data used, we conducted two different unit root tests that are common in the literature. We used the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests.

The ADF unit root test involves testing the null hypothesis of a unit root, H_0: α = 0, versus the alternative of a stationary process, H_1: $\alpha \neq 0$. The test is based on the typical t-ratio for α . The t-statistic does

not however follow the t-distribution under the null; thus, critical values are simulated for each regression specification and sample size. PP unit root test uses a non-parametric method to control for serial correlation under the null hypothesis. H_0 and H_1 are the same as in the ADF test; however, PP unit root test is based on its own statistic and corresponding distribution.

The detail of the unit root tests is discussed in Brooks (2005), Greene (2003), and Maddala (1992). The results for both test are shown in Table 4.4. The rule adopted is that if the absolute value of the ADF test or that of PP test is greater than 5% critical value, then the tested variable is said to be stationary, otherwise the tested variable is non-stationary. This is appropriate in order to avoid any variable above I(2). According to Outtara (2004), the presence of I(2) variables make the computed F-statistics provided by Peseran et al (2001) not valid because the bound test is based on the assumption that the variables are I(0) or I(1). From the analysis below it is obvious that most of the variables are stationary at level in both ADF-fishers test and PP-fishers test.

From Panel unit root test of at the variables (with Individual Intercept), return on assets (ROA) , log of underwriting risk (logUWR- proxy for Net premium), working capital and size (logWC) are found to be integrated at level, that is I(0), while liquidity ratio (LIQ), log of dividends (logDVD) and log of investments (logINV) are integrated at order one, that is I(1)

Table 4.4   Panel Unit Root Test Of All Variables (With Individual Intercept)

Variables	ADF-Fishers test statistic			PP-Fishers test statistic		
	Levels	1stDifferen	Remarks	Level	1st Diff	Remark
ROA	15.8944	-	I(0)**	25.2859	69.5805	I(0)*
LIQ	13.4135	41.0690	I(1)*	11.7219	38.0034	I(1)*
LogDVD	4.771	23.6952	I(1)*	14.1726	39.4627	I(1)*
logEC	18.2719	28.4877	I(1)**	38.6175	43.6517	I(1)*
logINV	11.7408	19.3443	I(1)***	31.8611	49.1583	I(1)***
logUWR	30.8875	-	I(0)*	33.2551	-	I(0)*
logWC	30.3565	-	I(0)*	41.3581	-	I(0)*
SIZE	24.9602	-	I(0)*	38.8354	-	I(0)*

NOTE: *, ** and *** denotes 1%, 5% and 10% levels of significance respectively
Source: Author's Computation

Having established (10) strategies adopted by insurance companies in the management of liquidity, it is therefore imperative to examine the effect of liquidity management on the financial performance of Insurance companies.

Panel regression using ROA as dependent variable

From Table 4.5, panel least square econometrics techniques were adopted in this study. Return on assets (ROA) is used as a dependent variable while liquidity, dividends, equity capital, investments, underwriting risk, working capital and size of the firm are the independents variables. In such:

$$ROA_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 logDVD_{it} + \beta_3 logEC_{it} + \beta_4 logINV_{it} + \beta_5 logUWR_{it} + \beta_6 WC_{it} + \beta_7 logSIZE_{it}$$

It can be deduced from the Table 4.4 that liquidity ratio (proxy for liquidity management) as positive but insignificant effect on return on assets (ROA) with the value of t-statistics = 0.4673 and probability value = 0.6514 > 0.05. In such that a unit change in liquidity ratio will lead to about 0.3447 percentage point increase on return on assets. The result was consistent with the findings of Owolabi and Obida (2002) who observed that there is a relevant degree of relationship between liquidity management and profitability of firms.

Dividends has a negative and significant relationship on return on assets with the value of t-statistics = -2.0107 and probability value = 0.0452 < 0.05. That is, a unit change in dividends will lead to about 2.4799 percentage point decrease in return on assets. Also, equity capital has a negative and insignificant relationship on return on assets with the value of t-statistics = -1.8352 and probability value = 0.0997 > 0.05. A unit change in equity capital will lead to about 11.9649 percentage point decrease in return on assets.

Furthermore, investment, has positive but significant effect on return on assets (ROA) with the value of t-statistics = 1.1894 and probability value = 0.0447 which is greater than 5 percent. In such, that a unit change in investment will lead to about 8.9247 percentage point increase on return on assets.

Underwriting risk (logUWR) has positive but insignificant effect on return on assets (ROA) with the value of t-statistics = 0.0741 and probability value = 0.9425 > 0.05. A unit change in investment will lead to about 0.2921 percentage point increase in return on assets.

Table 4.5: Panel regression result

Dependent Variable: ROA
Method: Panel Least Squares
Date: 02/27/17   Time: 19:24
Sample (adjusted): 2003 2012
Periods included: 9
Cross-sections included: 5
Total panel (unbalanced) observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	98.93726	114.7708	0.862042	0.4110
LIQ	0.344747	0.737800	0.467263	0.6514
D(LOGDVD)	-2.479903	1.233347	-2.010710	0.0452
D(LOGEC)	-11.96487	6.519817	-1.835155	0.0397
D(LOGINV)	8.924733	4.503634	1.189388	0.0447
LOGUWR	0.292051	3.939833	0.074128	0.9425
LOGWC	1.946782	2.814817	0.691620	0.0366
SIZE	-7.994914	7.488595	-1.067612	0.3135

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.830307	Mean dependent var	1.516843
Adjusted R-squared	0.472066	S.D. dependent var	7.819299
S.E. of regression	5.681430	Akaike info criterion	6.521522
Sum squared resid	290.5079	Schwarz criterion	7.464485
Log likelihood	-74.56207	Hannan-Quinn criter.	6.816846
F-statistic	2.317732	Durbin-Watson stat	1.852759
Prob(F-statistic)	0.098547		

Working capital (logWC) has positive but significant effect on return on assets (ROA) with the value of t-statistics = 0.6916 and probability value = 0.0366 > 0.05. A unit change in working capital will lead to about 1.9468 percentage point increase in return on assets. Size (which is the log of total assets) has negative and insignificant effect on return on assets with the value of t-statistics = -1.0676 and probability value = 0.3135 > 0.05. A unit change in size of the firm will lead to about 1.0676 percentage point decrease in return on assets.

The F-statistics, which shows if the independent variables are jointly influence the dependent variable (ROA), was insignificant with a probability value of 0.0985. However, the R-square of 0.8303 which measures the goodness of fit shows that 83 percent changes in dependent variable (that is, ROA) is influenced by independent variables within the model, while the remaining 17 percent is explained by the variables that were not included in the model.

Serial correlation was not present in the result; it was removed by taking the first difference of the variables. The Durbin Watson statistics of 1.8528 (approximately, 2), signified the absence of serial correlation in the model. Since the Durbin Watson was approximately two. Also, the F-statistics of 2.3177, shows that the independent variables were jointly affected the dependent variable in the model.

V.   Conclusion and Recommendations

The results have shown that liquidity management does not have significant impact on financial performance of the insurance companies but rather equity management. The findings from the research indicate that all the indicators of equity management exhibit significant impact on financial performance of the insurance companies. This result might not be unconnected with the fact that insurance companies are not financial intermediaries that placed priorities on liquid cash like the deposit money banks. Soyebi (2003) discovered a significant relationship between liquid assets of commercial banks and their performance. This result indicates that liquid cash are a more important to the banking sector than the insurance sector.

Notwithstanding, dividend increase which is an indicator of equity management showed a significant negative impact on financial performance. This is means that earnings of insurance companies will fall significantly if dividend keeps on rising. In addition, equity capital failed to have significant impact on

performance; this might not be unconnected with the trade-off between the shareholders fund and the dividend they collect.

It appears that the equity generated is not up to the level of dividend paid to the shareholders. This might have been responsible for the insignificance of equity capital. But investment and working capital both exhibit significant and positive impacts on financial performance. Therefore, it is encouraging for insurance companies to improve on their working capital as well as investment to improve their financial performance.

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