

## **THE EFFECT OF LIQUIDITY RISK ON INSURANCE INVESTMENTS IN NIGERIA**

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**Keywords:**

Effect, Insurance, Investments, Liquidity, Risk

**Abstract:** *The study determined the effect of liquidity risk on insurance investments in Nigeria. Specifically, the study sought to: examine the effect of Funding liquidity risk and market liquidity risk on Insurance industry investments in Government Securities in Nigeria. An Ex-post factor research design was adopted for the study. A Secondary source of data was used in the study. The data were obtained from the Central Bank of Nigeria Statistical Bulletin of 2016 and the Nigerian Insurers Association Annual publications of various years. The data was analysed using Ordinary Least Square Regression. The result revealed that funding liquidity risk has a positive and significant effect on Nigerian insurance industry investments in Government securities with a probability of the t-statistic of  $0.0327 < 0.05$ . while market liquidity risk has a negative and significant effect on Nigerian insurance industry investments in Government securities with a probability of the t-statistic of  $0.1616 > 0.05$ . We concluded that liquidity risk has a significant positive effect on insurance investments within the Nigerian market. We recommended that Insurers should adopt diversification strategies to spread their investment portfolios across various asset classes, including equities, bonds, and alternative investments.*

### **1.1 Introduction**

One of the most important decisions a financial manager makes is how liquid a firm's balance sheet should be. Given an inflow of cash to the firm, a manager can choose to reinvest the cash in physical assets, distribute the cash to investors, or keep the cash inside the firm. Cash is a very important current asset for the operation of any business (Ejoh, Okpa, and

Egbe, 2014). It is the input needed to keep the business running continuously. An insurance company as a business concern needs to have cash and assets which it can easily convert into cash at short notice to pay claims as and when due. Simply put it needs to be liquid. Cash is considered the standard for liquidity because it can most quickly and easily be converted into other assets (Investopedia, 2018). Traditionally,

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liquidity has been defined as the capacity of financial institutions to finance increases in their assets and comply with their liabilities as these mature. It refers to the ability to obtain funding on the market and asset (or market) liquidity, associated with the possibility of selling the assets.

We think of liquidity as a measure of a company's ability to meet its known and unknown cash needs as they arise. Liquidity refers to the speed and certainty with which an asset can be converted back into cash whenever the asset holder desires (Acharya and Naqvi, 2012). Liquidity means how quickly you can get your hands on your cash. In simpler terms, liquidity is to get your money whenever you need it. The issue of liquidity cannot be kept far from insurance. The insurance sector plays an important role in the provision of critical financial services. The issue of liquidity cannot be kept far from insurance. The insurance sector plays an important role in the provision of critical financial services. First, insurance coverage allows households, corporations, and public sector entities to transfer risks (French and Vital, 2015). For example, general insurance companies help firms and households limit the financial costs associated with the occurrence of various risks to their physical property, legal liability, and miscellaneous financial loss. Second, insurance companies channel savings into investments (French and Vital, 2015).

Life insurance companies, for example, help individuals to cover risks arising from uncertainty about their health and lifespan, and

one way that they do this is by gathering funds from policyholders and investing these in debt, equity, and other assets. Of particular concern to this study is the risk arising from liquidity. The inability of insurance firms to raise liquidity can be attributed to a funding liquidity risk that is caused either by the maturity mismatch between inflows and outflows and/or the sudden and unexpected liquidity needs arising from contingency conditions (Gaspar and Sousa 2010). Thus, the concept of liquidity risk in this study comes in the light of proper financial functioning in the insurance business.

### **1.2 Statement of the Problem**

Liquidity risk poses several problems to the investments of the insurance industry. The insurance industry is limited in its maneuverability of investments in equities whether locally or internationally due to liquidity risk challenges. When an investment opportunity arises that requires insurers to offload their investment in a particular equity to take advantage of another equity the liquidity level of the former equity determines the ease with which an insurer can invest in the later equity. Added to this, with larger classes of insurance policies falling under the non-life insurance sector it exposes the industry to mostly short-term contracts which require that insurers can respond immediately once called upon. This leaves the industry making investments in short-term instruments to be able to respond in the aftermath of shocks to the insured. Through this, the tenure of investments made by insurers is limited by the liquidity risk exposures they face.

### **1.3 Objectives of the study**

The main objective of this study is to determine the effect of liquidity risk on insurance investments in Nigeria. Specifically, the study sought to:

- i. Examine the effect of Funding liquidity risk on Insurance industry investments in Government Securities in Nigeria
- ii. Examine the effect of Market liquidity risk on Insurance industry investments in Government Securities in Nigeria

### **1.4 Research Hypotheses**

Hypotheses for the study are stated in null form as follows:

- i. Funding liquidity risk has no significant effect on Insurance industry investments in Government Securities in Nigeria.
- ii. Market liquidity risk has no significant effect on Insurance industry investments in Government Securities in Nigeria.

## **2.0 Review of related literature**

### **2.1 Conceptual Review**

#### **Liquidity risk**

Liquidity is mostly used in the financial market to describe the characteristics of an asset. It is the “degree of ease and certainty of value with which an asset or security can be converted to cash”. Liquidity is characterized by a high level of trading activity. Liquidity is the term used to describe how easy it is to convert assets to cash. The most liquid asset, and what everything else is compared to, is cash. Traditionally, liquidity has been defined as the capacity of financial institutions to finance increases in their assets and comply with their liabilities as these mature (Kumar and Yadav, 2013). Sanusi (2009)

defined risk as the probability that an organization or an individual will be unable to meet some expectations it had set for itself in a given period. Egungwu (2004) defined risk as a situation where it is not known what the future outcome will be but where the various possible outcomes may be expected with some degree of confidence from knowledge of past or existing events. A more comprehensive definition would be: risk is the uncertainty of loss.

Liquidity risk is a financial risk that for a certain period at a given financial asset, security or commodity cannot be traded quickly enough in the market without impacting the market price. It is the probability of loss arising from a situation where (1) there will not be enough cash and/or cash equivalents to meet the needs of depositors and borrowers, (2) the sale of illiquid assets will yield less than their fair value or (3) illiquid assets will not be sold at the desired time due to lack of buyers.

#### **Funding Liquidity Risk**

According to the BIS (2006), funding liquidity risk captures the inability of a financial intermediary to service its liabilities as they fall. Other definitions of funding liquidity risk usually involve a time horizon, that is, the probability of becoming illiquid is typically measured for a given period ahead and can differ significantly according to the length of the period (Drehmann and Nikolaou, 2008). Typically, funding liquidity risk depends on the availability of the four liquidity sources, the ability of banks to meet their liabilities, unwind or settle their positions as they come due (BIS, 2006); the ability of solvent institutions to make

agreed-upon payments in a timely fashion; from the point of view of traders, (Brunnemeier and Pedersen, 2007) or investors (Strahan, 2008), where funding liquidity relates to their ability to raise funding (capital or cash) in short notice) and the ability to satisfy the budget constraint over the respective period.

Measuring funding liquidity risk is not trivial. In most cases, practitioners construct various funding liquidity ratios, which reveal different aspects of the availability of funds within a certain time horizon ahead and use them as proxies for funding liquidity risk. Such measures can be produced either by static balance sheet analysis or by dynamic stress testing techniques and scenario analysis. Recently, Drehmann and Nikolaou (2008) suggest a simple and more straightforward proxy, based on the role of the central bank as a potential funding liquidity source. They argue that bidding behavior in central bank auctions can reveal the funding liquidity risk of banks over a one-week horizon and construct proxies of funding liquidity risk from bidding data. Drehmann and Nikolaou (2008) found that funding liquidity risk bears similarities to market liquidity risk, in the sense that it is low and stable most of the time, but subject to occasional spikes (e.g. funding liquidity risk appears elevated during the current turmoil period). This finding is supported by Majakusi (2012), who views liquidity risk as a consequential risk because it increases following one or more spikes in other financial risks (i.e. market liquidity risk).

### **Market liquidity risk**

Market liquidity risk relates to the inability to trade at a fair price with immediacy. It is the systematic, non-diversifiable component of liquidity risk. This has two important implications. First, it suggests commonalities in liquidity risk across markets. Such commonalities have been grounded theoretically (Brunnemeier and Pedersen, 2007) and recorded empirically across stocks, bonds, and equity markets (Chordia et al. 2005). More extensive propagation mechanisms can also transfer liquidity risk across interbank and asset markets. The second implication of systemic risk is that it should be priced. Namely, market liquidity risk has been typically regarded as a cost or premium in the asset pricing literature, which affects the price of an asset in a positive way (Bangia et al., 1999; Acharya and Pedersen, 2005; Chordia et al., 2005) thereby influencing market decisions (i.e. optimal portfolio allocation) and market practices (i.e. transaction costs). The larger the premium, the higher the market liquidity risk. In practical terms, starting with the liquidity-based asset pricing model, asset pricing models typically measure liquidity risk as the covariance (commonality) between a measure of liquidity (innovations) and market returns (Acharya and Pedersen, 2005). The implications of market (systemic) liquidity risk are important from a financial stability point of view. Individual liquidity risk (leading to a single or few bank failures) might not be of consequence, and indeed might even be a helpful mechanism to restore financial health in

certain parts of the system. However, systemic (market) liquidity risk can have serious repercussions for the financial system as a whole. Notably, it can lead to financial crises, which damage financial stability, disrupt the allocation of resources, and ultimately, affect the real economy (Holden, 2009). Given the importance of market liquidity risk (i.e. systemic risk) to financial stability, it is the type of liquidity risk that immediately alerts policymakers. Nevertheless, given the intense linkages among the various liquidity types, a general view of the liquidity flows in the system is also needed to examine market liquidity risk.

### **Insurance Investments**

Insurance is a security that is needed by all human beings. According to Ehiogu (2017), Insurance is a form of risk management that is used primarily to hedge against the risk of a contingent, uncertain loss. Insurance is defined as the equitable transfer of the risk of loss, from one entity to another, in exchange for payment. Insurance is a form of risk management that is used primarily to hedge against the risk of a contingent, uncertain loss. Insurance is defined as the equitable transfer of the risk of loss, from one entity to another, in exchange for payment. It is a protection against financial loss that may occur due to an unexpected event. The primary function of insurance is the creation of the counterpart of risk, which is security. The term investment from the point of view of an insurance manager, is the conversion of money, insurance funds, and reserves into some species of property from which an income or profit is expected to be derived either immediately or at

some future date in the normal course of business. According to Ehiogu (2017), an investment is any asset or property right acquired or held to conserve capital or earn an income. Considering the Nigerian environment, the investment of insurance funds is heavily regulated by growth and problems.

### **2.2 Theoretical Review**

#### **Liquidity preference theory**

The liquidity preference theory was propounded by John Maynard Keynes in 1939. According to Keynes, individuals value money for, “the transaction of current business and its use as a store of wealth.” For this reason, Keynes purports that they tend to relinquish interest earnings on their money to spend their money in the present. He also suggests that these individuals prefer to keep their money on hand as a precautionary measure. Keynes (1939) also theorizes that when higher interest rates are offered, individuals are more willing to hold on to less money to obtain a profit. The liquidity preference theory suggests that an investor demands a higher interest rate, or premium, on securities with long-term maturities, which carry greater risk, because all other factors being equal, investors prefer cash or other highly liquid holdings. More liquid investments are easier to sell fast for full value. According to the liquidity preference theory, interest rates on short-term securities are lower because investors are sacrificing less liquidity than they do by investing in medium-term or long-term securities.

### **Capital Structure Theory**

This theory was devised in the 1950s by Modigliani and Miller. It states that a company can finance its operations by either debt or equity or different combinations of these two sources. The theory assumed a perfect capital market where there is no problem of asymmetric information: there are no transaction costs; no bankruptcy costs and the securities are infinitely divisible. Managers act in the interest of shareholders and the firms can be grouped into equivalent risk classes based on their business risk; they assumed that there is no tax Modigliani and Miller (1958) created a fictional world without taxes, transaction costs, bankruptcy costs, growth opportunities, asymmetric information between insider and outsider investors and differences in risk between different firms and individuals. They proved that under these perfect conditions financing is irrelevant to shareholder's wealth and there is no optimal debt-to-equity ratio. To make it more realistic, Modigliani and Miller (1963) later modified their model by lifting one restriction.

### **2.3 Empirical Review**

Cheluget et al (2013) assessed Liquidity as a determinant of financial distress among insurance companies in Kenya. The study examined liquidity as a possible determinant of financial distress in insurance companies in Kenya. The study used a survey design. Upon evaluation, the study established a significant relationship between liquidity and financial distress. The relationship model provides a moderate fit but indicates that liquidity was one

of the potential causes of financial distress in insurance companies in Kenya.

Kamau and Njeru (2016) conducted a study on the Effect of Liquidity Risk on Financial Performance of Insurance Companies Listed at the Nairobi Securities Exchange, in Kenya from 2012 to 2015. A descriptive research design was used for this study. The results revealed a significant relationship between the liquidity risk and financial performance and also there is a negative relationship between liquidity risk and financial performance for the insurance companies measured by the ROE.

According to Ouma (2015) conducted a study to find out the effect of liquidity risk on the profitability of commercial banks in Kenya. The research used a survey design. There was a significant relationship between the liquidity and profitability of commercial banks in Kenya. In addition, a bank having liquidity problems may experience difficulties in meeting the demands of depositors, however, this liquidity risk may be mitigated by maintaining sufficient cash reserves, raising the deposit base, and decreasing the liquidity gap and profitability of commercial banks.

Ariwa et al (2017) investigated the impact of stock market liquidity and efficiency on the performance of the manufacturing sector in Nigeria. The study aims to evaluate the relationship between stock market efficiency and turnover in the manufacturing sector in Nigeria. The study used time series data from 1985-2014. The findings revealed that stock market efficiency and the number of deals were

significant variables that explained the changes in the Nigerian manufacturing sector.

**3.0 Methodology**

An Ex-post factor research design was adopted for the study. A Secondary source of data was used in the study. The data were obtained from the Central Bank of Nigeria Statistical Bulletin of 2016 and the Nigerian Insurers Association Annual publications of various years. The data was analyzed using Ordinary Least Square Regression.

**Model Specification**

The hypotheses of the study were modeled as follows:

Hypothesis one states that liquidity risk does not have a positive and significant effect on the Nigerian insurance industry investments in Government securities. Hypothesis one was modeled as:

$$INSIGS_t = \beta_0 + \beta_1 FLR_t + \mu_t \quad (FLR)$$

.....(1)

The model is specified as follows:

$$INSIGS_t = \beta_0 + \beta_1 FLR_t + \mu_t \quad (2)$$

Where INSIGS: = Insurance Sector investments in Government Securities in Nigeria  
 FLR = Funding Liquidity Risk  
 $\beta_0, \beta_1$  = constant parameter,  $\mu$  = the error term

Hypothesis two states that liquidity risk does not have a positive and significant effect on insurance industry investments in stocks and bonds in Nigeria. The functional relation of the model is given as:

$$INSISB_t = \beta_0 + \beta_1 MLR_t + \mu_t \quad (MLR)$$

.....(3)

The model is specified as follows:

$$INSISB_t = \beta_0 + \beta_1 MLR_t + \mu_t \quad (4)$$

Where:  $INSISB_t$  = Insurance Sector investments in Government Securities in Nigeria  
 $MLR_t$  = Marketing Liquidity Risk  
 $\beta_0, \beta_1$  = constant parameter  
 $\mu$  = the error term

**4.0 Data presentation**

The crux of the study focus is on the presentation of data, analysis, and interpretation of results to explain the effect of liquidity risk on insurance sector investments between 1996– 2016. This section starts with the annual time series data for liquidity risk (independent variable), and dependent variable (investments in stocks and bonds, government securities, policy loans, bills of exchange, and real estate and mortgage) in Table 4.1.

**Table 4.1.1: Data (Explanatory and Dependent Variables) in Ratios**

Years	RGSTI	RSBTI	LR
1996	0.124897	0.326978	0.523566
1997	0.1478	0.300842	0.587194
1998	0.264796	0.232049	0.54907
1999	0.138403	0.193391	0.568164
2000	0.141269	0.198188	0.597328
2001	0.119497	0.211033	0.647641
2002	0.10157	0.22606	0.605198
2003	0.082156	0.21028	0.754747
2004	0.055893	0.269093	0.733868
2005	0.03429	0.507212	0.903075
2006	0.022454	0.563012	1.169936
2007	0.063523	0.675111	1.391428
2008	0.063523	0.675111	1.596136
2009	0.063523	0.675111	1.397356
2010	0.063523	0.675111	1.192635
2011	0.063523	0.675111	1.08335
2012	0.063523	0.675111	1.00112
2013	0.063523	0.675111	0.941654
2014	0.063523	0.675111	0.877966
2015	0.063523	0.675111	0.870274
2016	0.063523	0.675111	0.796093

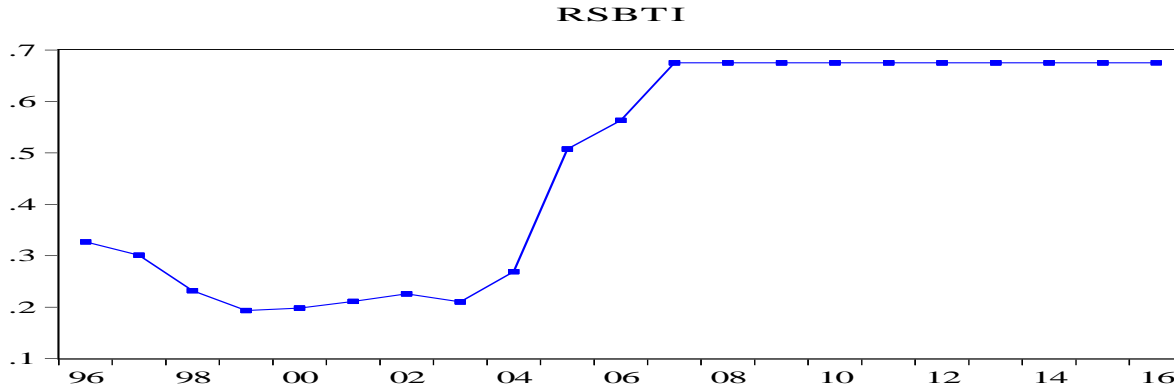
Source; Author's Calculation with Data in Appendix 1

Where: RSBTI = Ratio of investment in Stocks and Bonds to Total Investment, RGSTI = Ratio of investment in Policy Loans to Total Investment, LR = Liquidity risk.

**Investment in Stocks and Bonds:** refers to a mixture of **purchase of** shares of individual companies (**Stocks**) and giving loan to a

government, corporation, or other entity that needs to raise cash and/or borrows money in the public market and subsequently pays interest on that loan to investors (**Bonds**). This variable was arrived at as a ratio of insurance industry investment in stocks and bonds and total investment of the industry.





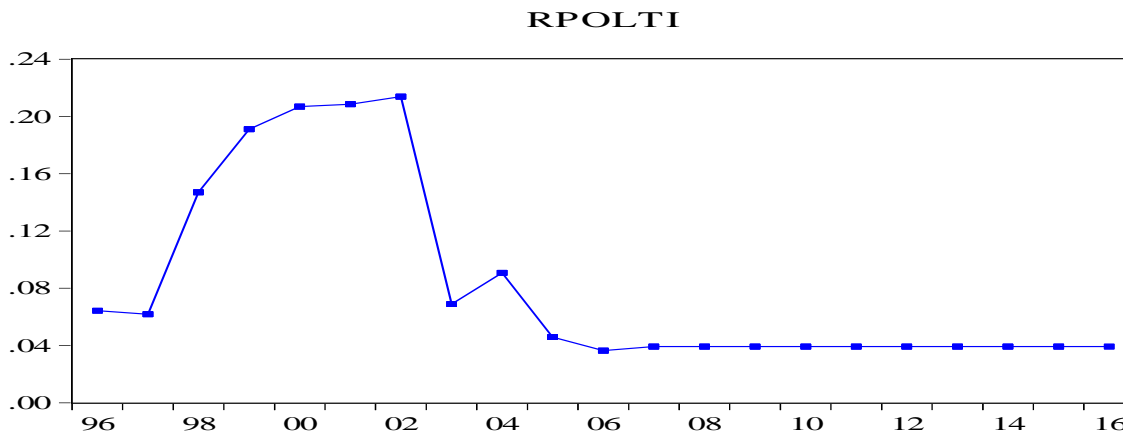
**Fig. 1. Graphical representation of Ratio of Stocks and Bonds to Total Investment**

Source; Table 4.1.1

Fig. 1 shows that the ratio of stocks and bonds stood at 0.3269 in 1996 thus indicating that 32.69% of Nigerian Insurance Sector total investment is composed of stocks and bonds. The Sector's investment in stocks and bonds declined to 19.33% in 1999 when it picked up to 21.10% in 2001. In 2005 and 2006, the ratio of stocks and bonds to total investment of the Sector grew to 0.507212 and 0.563012 respectively. Fig. 1 shows that the ratio of stocks and bonds to Insurance Sector total investment

averaged 0.65751 between 2007 and 2016. This implies that throughout these period, that 65.75% of the Sector's total investment is composed of Stocks and bonds.

**Investment in Policy Loans** refers to loans issued by an insurance company that uses the cash value of a person's life insurance policy as collateral. This variable was arrived at as a ratio of insurance industry investment in policy loans and total investment of the industry.



**Fig. 2: Graphical Representation of Ratio of Policy Loans to Total Investment**

Source; Table 4.1.1

Fig. 2 shows that the ratio of policy loans stood at 0.064294 in 1996 thus indicating that 6.429% of the Nigerian Insurance Sector's total investment is composed of policy loans as at 1996. The Sector's investment in policy loans grew by 20.4% in 2002 when the investment in policy loans peaked at 26.12% in 2002. In 2005 and 2006, the ratio of policy loans to total investment of the Sector declined to 0.045884 and 0.036443 respectively. Fig. 3 shows that the

ratio of policy loans to the Insurance Sector total investment averaged 0.039319 between 2007 and 2016. This implies that throughout these periods, 3.93% of the Sector's total investment is composed of policy loans.

#### **4.2 Descriptive Statistics**

The descriptive statistics of the time series data was estimated and the outcome presented in table 4.2.

**Table 4.2: Descriptive statistics**

	INF	LR	RGSTI	RSBTI
Mean	-2.720905	0.894657	0.088965	0.475678
Median	0.315000	0.870274	0.063523	0.563012
Maximum	11.94100	1.596136	0.264796	0.675111
Minimum	-43.56800	0.523566	0.022454	0.193391
Std. Dev.	11.37807	0.312477	0.053370	0.214539
Skewness	-2.400820	0.705992	1.793654	-0.251827
Kurtosis	9.255881	2.506370	6.585971	1.206241
Jarque-Bera	54.41781	1.957698	22.51197	3.037334
Probability	0.000000	0.375743	0.000013	0.219004
Sum	-57.13900	18.78780	1.868255	9.989248
Sum Sq. Dev.	2589.210	1.952843	0.056966	0.920537
Observations	21	21	21	21

Source: Author's Eviews Output

Where: RSBTI = Ratio of investment in Stocks and Bonds to Total Investment, RGSTI = Ratio of investment in Policy Loans to Total Investment, LR = Liquidity risk = Ratio of Asset – Liability.

Table 4.2 shows that liquidity risk, policy loans, and stocks and bonds to total investment of the individual samples is 11.94, 1.59, 0.32, 0.26, 0.21, 0.29, and 0.67 respectively. The standard deviations of 11.3, 0.31, 0.12, 0.05, 0.06, 0.08, and 0.21 the respective maximum ratios of

liquidity risk, policy loans, and stocks and bonds to a total investment of the individual samples did not deviate widely from their respective mean of -2.72, 0.89, 0.10, 0.08, .0.8, 0.13 and 0.47.

The leanness of the dataset to one side of the distribution is determined by the skewness and could be positively or negatively skewed. The skewness estimate for the individual samples suggests that apart from stocks and bonds to total investment which is negatively skewed,

others are positively skewed. This suggests that a relatively larger probability distribution of the variables means have fatter tails to the right of the distribution. The relative skewness of the variables does not lie closer to zero for all the variables except for the ratio of policy loans to total investment 1.79 and 1.20 respectively, thus, suggesting that the probability distribution is perhaps not evenly distributed around their respective means. The normality of the probability distribution is justified by the Jarque-Bera statistics as we reject the null hypothesis that the variables are not normally distributed with the probability of the Jarque-Bera statistics of 0.000013 and 0.000000 < 0.05 thus, accepting the alternate hypothesis that the two variables are normally distributed.

**4.3 Stationarity Test/Unit Root test result.**

**Table 4.3: Augmented Dicky Fuller Unit Root Test.**

Variables	Test Critical value* at 1%.	Adj. t-Stat @ level	Status	Test Critical value* at 1%.	Adj. t-Stat @ level
LR	-4.532598	-1.482517	1(2)	-4.571559	-4.888049
RISIGSTI	-4.728363	-2.505970	1(1)	-4.532598	-5.724618
RISISBTI	-4.498307	-1.592984	1(2)	-4.571559	-6.271372

Source: Author’s Eview output, 2018.

Where: RSBTI = Ratio of investment in Stocks and Bonds to Total Investment, RGSTI = Ratio of investment in Policy Loans to Total Investment, LR = Liquidity risk = Ratio of Asset – Liability.

Table 4.3 reports the unit root properties of the variables of the study. The table reveals that all the time series were not stationary at level. This is evidenced by the Test Critical value\* at levels

A time series is stationary if its mean and variance are independent of time. If the time series is non-stationary, that is, having a mean and or variance changing over time, it is said to have a unit root. Stationarity is important in econometrics as most time series data exhibit unit root problems. If a time series is non-stationary, the regression analysis carried out conventionally will produce spurious results. A spurious regression occurs when after regressing a time series variable on others, the test statistics show a positive relationship between these variables even though no such relationship exists.

To guard against spurious results, this study took caution by checking the stationarity properties of the variables using the Augmented Dicky Fuller Unit Root test.

of -1.482517, -2.360463, -2.505970, -2.306787, -2.883725 and -1.592984>Critical value\* at 1% for the variables respectively as tabulated. Thus, the acceptance of the null hypotheses of a unit root. This is evidenced by the graphical representation in Fig. 7.

**4.4. Test of Hypotheses.**

This section of the work presents the test of hypotheses stated in Chapter One to enhance

the achievement of set objectives. To test the hypotheses for acceptance and or rejection, four steps were adopted. These are;

**Step One:** Statement of the hypothesis in both null and alternate forms

**Step Two:** Statement of the decision criteria

**Step Three:** Presentation of the Eviews results for the hypothesis testing.

**Step One:** Statement of the hypothesis in both null and alternate forms

Dependent Variable: DRSBTI

Method: Least Squares

Date: 07/20/18 Time: 10:52

H<sub>0</sub>: Sample (adjusted): 2 21

Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.018645	0.013304	1.401502	0.1791
DLR	0.233137	0.100277	2.324931	0.0327
DINF	-0.001757	0.001337	-1.314255	0.2062
R-squared	0.274504	Mean dependent var		0.017407
Adjusted R-squared	0.189151	S.D. dependent var		0.063806
S.E. of regression	0.057455	Akaike info criterion		-2.738137
Sum squared resid	0.056119	Schwarz criterion		-2.588777
Log likelihood	30.38137	Hannan-Quinn criter.		-2.708981
F-statistic	3.216116	Durbin-Watson stat		2.098884
Prob(F-statistic)	0.065373			

Funding liquidity risk does not have a positive and significant effect on stocks and bonds

H<sub>1</sub>: Funding liquidity risk has a positive and significant effect on stocks and bonds.

**Step Two:** Statement of the decision criteria

The decision criteria are to accept the null hypothesis if the sign of the coefficient is -tive and the probability of the t-Statistics > 0.05, otherwise reject the null hypothesis while accepting the alternate accordingly.

**Step Four:** Decision.

#### 4.4.1 Test of Hypothesis One

Hypothesis one seeks to examine the extent to which Funding liquidity risk affects the Nigerian insurance industry investments in stocks and bonds.

**Step Three:** Presentation of the Eviews results for the hypothesis testing.

Regression Result for Test of Hypothesis Two  
Source: Author's Eviews Output, 2018

**Step Four:** Decision.

The decision criteria are to accept the null hypothesis if the sign of the coefficient is -tive and the probability of the t-Statistics > 0.05, otherwise reject the null hypothesis while accepting the alternate accordingly. Table 4.16

shows the sign of the coefficient of 0.233137 to be +tive and the probability of the t-statistic of  $0.0327 < 0.05$ . Thus, we reject the null hypothesis and conclude that funding liquidity risk has a positive and significant effect on Nigerian insurance industry investments in Government securities.

#### 4.4.2 Test of Hypothesis Two

Hypothesis three seeks to examine the extent to which market liquidity risk affects policy loans.

**Step One:** Statement of the hypothesis in both null and alternate forms

Regression Result for Test of Hypothesis Three

Dependent Variable: DRPOLTI  
Method: Least Squares  
Date: 07/20/18 Time: 11:00  
Sample (adjusted): 2 21  
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001185	0.009585	-0.123623	0.9031
DLR	-0.105724	0.072245	-1.463416	0.1616
DINF	0.000548	0.000963	0.568840	0.5769
R-squared	0.118431	Mean dependent var		-0.001249
Adjusted R-squared	0.014717	S.D. dependent var		0.041702
S.E. of regression	0.041394	Akaike info criterion		-3.393887
Sum squared resid	0.029129	Schwarz criterion		-3.244527
Log likelihood	36.93887	Hannan-Quinn criter.		-3.364730
F-statistic	1.141904	Durbin-Watson stat		2.010360
Prob(F-statistic)	0.342513			

Source: Author's Eviews Output, 2018

**Step Four:** Decision.

The decision criteria are to accept the null hypothesis if the sign of the coefficient is -tive and the probability of the t-Statistics  $> 0.05$ , otherwise reject the null hypothesis while

$H_0$ : Market liquidity risk does not have a positive and significant effect on policy loans.

$H_1$ : Market liquidity risk has a positive and significant effect on policy loans.

**Step Two:** Statement of the decision criteria

The decision criteria are to accept the null hypothesis if the sign of the coefficient is -tive and the probability of the t-Statistics  $> 0.05$ , otherwise reject the null hypothesis while accepting the alternate accordingly.

**Step Three:** Presentation of the E views results for the hypothesis testing.

accepting the alternate accordingly. Table 4.17 shows the sign of the coefficient of -0.105724 to be -tive and the probability of the t-statistic of  $0.1616 > 0.05$ . Thus, we accept the null hypothesis and conclude that market liquidity

risk has a negative and significant effect on Nigerian insurance industry investments in Government securities.

### **5. Summary of Findings**

- i. Funding Liquidity risk has a positive and significant effect on the Nigerian insurance industry investments in Government securities.
- ii. Market Liquidity risk has a negative and significant effect on the Nigerian insurance industry investments in Government securities.

### **Conclusion**

In conclusion, the analysis underscores the critical effect of liquidity risk on insurance investments within the Nigerian market. The findings reveal that both funding liquidity risk and market liquidity risk exert significant positive effects on the insurance industry's investments in government securities. This highlights the intricate relationship between liquidity risk and investment decisions within the insurance sector in Nigeria. The positive influence of funding liquidity risk suggests that insurers prioritize investments in government securities to mitigate liquidity shortages, thereby ensuring financial stability and solvency. Similarly, the notable impact of market liquidity risk emphasizes insurers' reliance on government securities as a liquid and secure investment avenue, especially in times of market turbulence.

Understanding and managing liquidity risk are paramount for insurers to safeguard their investment portfolios and maintain resilience amidst market uncertainties. Policymakers and regulatory authorities must also remain vigilant, implementing measures to enhance

liquidity management practices within the insurance industry, thereby fostering stability and sustainability in Nigeria's financial landscape. We concluded that liquidity risk has a significant positive effect on insurance investments within the Nigerian market.

### **Recommendations**

Based on the findings that both funding liquidity risk and market liquidity risk have significant positive effects on insurance industry investments in government securities in Nigeria, several recommendations can be made to enhance the management of liquidity risk in insurance investments:

- i. Government securities offer liquidity benefits, overreliance on them could lead to concentration risk. Insurers should adopt diversification strategies to spread their investment portfolios across various asset classes, including equities, bonds, and alternative investments. This approach can help mitigate the impact of liquidity shocks in any single asset class.
- ii. Insurers should regularly conduct stress tests and scenario analyses to assess their vulnerability to liquidity risk under different market conditions. By simulating extreme scenarios, insurers can identify potential liquidity shortfalls and develop proactive measures to address them.

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