

Deposit Insurance and Banking System Stability in Nigeria

Obim E. N., Owui H. O. & Nkamare S. E.
Department of Banking & Finance,
University of Calabar, Calabar

Ekanem B. C.
Department of Insurance/Risk Management,
University of Uyo, Uyo
nkamares001@gmail.com

Abstract

The study examined deposit insurance and banking system stability in Nigeria. The specific objectives were to examine the effect of loan recovery, dividend paid, broad money, inflation on total deposit. Secondary data was obtained using publications of Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC) and the World Bank., CBN statistical Bulletin, the CBN Annual Reports and Statements of Accounts, the NDIC Annual Reports, as well as other mainstream publications of the other agencies. Unit root test, co-integration test and the error correction mechanism techniques were employed to test and estimate the relevant equations. Based on the analysis of the results, Loan recovery had significant positive effects on the level of banking system stability in Nigeria, liquidation dividends actually impacted significantly on the level of banking system stability in Nigeria, the level of money supply in the financial system significantly impacted on the stability of the Nigerian banking system and Inflation had a positive influence on the level of banking system stability. The study recommended an urgent change in the loan recovery strategies currently adopted by the NDIC and the Central Bank of Nigeria; improve upon the compensation system already in place as well as intensify effort in public enlightenment through the electronic and mass media to educate the depositors about the activities of NDIC. There is also the need for the NDIC and other financial system regulators to be more proactive in their respective functions as well as evolve reforms that will encourage long-run stability in the Nigerian banking system.

1.0 Introduction

The financial system generally and the banking sector in particular remain the hub of economic growth and development in any nation. This is founded on the crucial role banks play in promoting economic activities by mobilizing funds from the surplus to the deficit units of the economy. (Ogunleye, 2014, Demirguc-Kunt and Kane, 2012). The financial intermediation role of banks enables the lending of such funds to the deficit spending units for investments and other uses. This process leads to increase in the quantum of national savings and investment. According to Mishkin (2015), banks are central to the payment system by facilitating economic activities between national and international economic units and by so doing encourage and promote trade, commerce and industry (Ebhodaghe, 2015). Because of their developmental role in every economy, the history of banking varies across countries and it has been widely traced to trends in each country's economic development. Although the role of banks within the larger economy is much more complex with technological advancement, the core traditional roles have not changed and still remain the bedrock of the banking system (Karels and McClatchey 2010, Gueyie and Lai (2012). The roles include financial intermediation, payments and settlements of bills, international trade, transfers and investment banking activities. Through the years, the ability of Nigerian banks to effectively perform these

roles has been hampered by internal and external issues which are peculiar to the Nigerian environment. (Demirguc – Kunt and Kane, 2012). The issues include poor asset quality, emphasis on short-term lending and investments, weak/non-compliance with regulations general insecurity of depositor's funds as well as inability to play a leading role in the emerging global markets. (Helfer, 2013, Ekechi, 2011). According to Laeven (2014), this has left a lot of worries as to the effectiveness of a deposit insurance model in creating and enhancing stability in the banking industry. Resolving the distress cases and compensating depositors of the failed banks has not been very smooth, despite the intervention of the NDIC. (Ogunleye, 2014, Garacia, 2009, Ogunleye, 2014, Kane 2013) The implication is that, in principle, not even the efforts of the CBN or those of the NDIC have aided the achievement of financial system stability in the country (Obim, 2013). Irrespective of the claims of these regulatory agencies, little research evidences exist to either demystify the problem or to suggest the best way forward. The specific objectives include to examine the effect of loan recovery, payment of liquidation dividends developments and inflation on banking system stability.

2.0 Theoretical framework

The following theories are anchored in this study

The Moral Hazard Theory

Gueyie and Lai (2012) define moral hazard as the exploitation of a mispriced risk-independent flat-rate deposit insurance system by increasing leverage and/or asset risk. The theoretical position here, according to Williamson (2008), is that banks have a greater preference for holding risky assets. Moral hazard explains certain behaviors of banks that might exacerbate excessive lending and extreme risk exposures, in reaction to regulatory forbearance. It can manifest from various sources, including bank lending, costly astute supervision, and inappropriate investment decisions by borrowers (Boyd, Chang, Smith (2012).).

The Explicit Deposit Insurance Theory:

Explicit Deposit insurance theory states that deposit insurance scheme is better focused on rules and procedures for providing protection to depositors as well as for assessment and management of failed and failing deposit institutions (Demirguc-Kunt and Detragiachem 2010 and Ogunleye, 2014). Blair, Carns, Kushmeider (2017) opined that: creation of the theoretical model explicit deposit insurance system is an expression of government support for the nation's banking system that reflects a concern about the potential for costly banks runs and the treatment of bank depositors, and thus recognizes the importance of transparency in government actions. Related to the explicit theory is the moral hazard principle. (Clifford, 2009)

3.0 Empirical literature

Empirical studies were carried on deposit insurance and banking system stability. Angkinand (2009), used a cross-section time – series of 47 banking crisis episodes in 35 industrial and emerging market economies between the 1970s and 2003, analyzed the relationship between banking regulation and supervision, and the severity of banking crises measured in terms of magnitude of output loss, and found that countries that provide comprehensive deposit insurance coverage and enforce strict bank capital adequacy requirements experience a smaller output cost of crises. The results of Angkinand (2009) are further amplified by those of Laeven (2014) and Bartholdy, Boyle, Stove (2003). By placing a ceiling on the amount of possible depositor's loss, the latter found that depositor insurance should result in a lower deposit risk premium. Using financial and institutional panel data from thirteen countries, they found equally that the risk premium was over 40 basis points higher on average in uninsured countries than in countries that offer insurance up to some pre-specific maximum. Insured banks could exploit a mispriced risk – independence flat-rate deposit

insurance (DI) system by increasing leverage (i.e, decreasing capital ratios) and / or risk, and that there are, however, factors that can induce self-discipline by banks. Specifically, they tested the presence or absence of moral hazard in Canada, where deposit insurance (DI) was first implemented in 1967. Their results failed to detect the presence of moral hazard in Canadian banking industry following the introduction of flat-rate deposit insurance (DI). They also found that the total risk of equity, the market risk, and the implicit volatility of banks' assets increased, that capital ratios also decreased, mainly in book values, but that those manifestations, while necessary for the presence of moral hazard, were not sufficient conditions for inducing risk shifting from banks to the Canada deposit insurance corporation (CDIC). Another proponent whose works focused on the United States. Park (1996) modeled an economy in which risk-averse savers and risk – neutral entrepreneurs made investment decisions. Using this model, Park argued that government deposit insurance that uses tax revenue to repay depositors, transfer remaining risks to entrepreneurs, and that deposit insurance can improve welfare because imperfect monitoring by the government largely results in income transfer among risk-neutral agents rather than lower production.

4.0 Research methods

The research data are from the publications of Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC) and the World Bank. Essentially, the target publications here include the CBN statistical Bulletin, the CBN Annual Reports and Statements of Accounts, the NDIC Annual Reports, as well as other mainstream publications of the other agencies. Several techniques are employed in this study to test and estimate the relevant equations. These include the unit root test, co-integration test and the error correction mechanism. For the purpose of this study, the empirical models for this study are specified in their functional forms as;

$$FSS_t = a_1 + \beta_1 LR/TLA_1 + \beta_2 RLQD_1 + \beta_3 M_2/GDP_1 + \beta_4 INF_1 + \mu_1$$

Where

FSS (Financial System Stability) = % (Total Deposit ÷ Total loans and Advances).

LR/TLA = % (Loan Recovered ÷ Total Loans and advances of failed banks)

RLQD = % (Liquidation Dividends paid ÷ Liquidation Dividends Declared)

M₂/GDP = Broad money supply (m₂) ÷ gross domestic product (GDP)

INF = inflation rate (annual)

5.0 Data analysis

Unit root test

Table 1 below shows regression for the purpose of clarifying the result for the augmented-Dickey-Fuller test (ADF) class of unit root test. It was found that not all the variables of the study exhibited unit root process at various critical levels mostly at one, five and ten per cent level of significance except for liquidation dividend that was stationary at levels. In other words, except for liquidation dividend, all other variables were found to be non-stationary at their levels, at such, their null hypotheses of the presence of unit root cannot be rejected. However, these variables became stationary at their first differences, hence; their null hypotheses can be rejected.

Co-integration result

The result of the trace test as presented in table 2 indicates three co-integrating equations at five per cent level. This is because the trace statistic values in each of the three equations are all greater than their critical values at five per cent of significance. Based on the trace test therefore, we can conclude that there is the presence of long-run relationship among the variables in the model.

The long-run estimation

Given that the series are co-integrated, there is need to estimate the long-run coefficients. The long-run coefficient measures the long-run effect of the independent variables on the dependent variable. From the co-integration test analyzed in the preceding section, the normalized long-run estimates are presented and reported in table 4. The result of the normalized long-run estimated as reported in table 3 above showed that loan recovered and liquidation dividend have significant positive relationship with deposit insurance in Nigeria in the long-run. This means that an increase in these variables will have a significant positive relationship with changes in determining deposit insurance in Nigeria in the long-run. On the other hand, broad money and inflation also have significant negative long-run relationship with deposit insurance in Nigeria. This implies that an increase in these variables will lead to a decrease in deposit insurance in Nigeria in the long-run. The result further showed that all variables were statistically significant at five per cent despite the fact that some did not turn out with their expected sign. This means that all variables have significant effect on the determination of deposit insurance administration in Nigeria in the long-run; some positive effect and some other negative

TABLE 1
Augmented Dickey-Fuller (ADF) unit root test

Variables	At Level	At Difference	1 st Order integration
FSS	-0.637270	-4.850557	I(1)
LR	0.020908	-4.234000	I(1)
LQD	-4.444937	-3.787955	I(1)
M2	-2.869143	-5.533103	I(1)
INF	-3.176040	-5.358128	I(1)
TEST OF CRITICAL VALUES:			
	1% = -3.699871		
	5% = -2.976263		
	10% = -2.627420		

Source: Researcher's computation from E-views

TABLE 2
Unrestricted cointegration rank test (trace)

Hypothesized	Trace		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.851604	110.2797	69.81889	0.0000
At most 1 *	0.717693	60.67505	47.85613	0.0020
At most 2	0.435420	27.79132	29.79707	0.0837
At most 3	0.293522	12.92781	15.49471	0.1175
At most 4 *	0.139085	3.893749	3.841466	0.0485

Source: Researcher's computation from E-views

TABLE 3
The normalized long-run estimates dependent variable: FSS

VARIABLES	COEFFICIENTS	STD. ERRORS
LR	0.822788	0.02718
LQD	0.144969	0.00570
M2	-0.139895	0.03331
INF	-0.166413	0.03010

Source: Researcher's computation from E-views

The short-run estimation

When variables are co-integrated, there must also be an error correction model (ECM) that describes the short-run dynamics or adjustments of the co-integrated variables towards their equilibrium values. However, before the short-run error correction model is estimated, the over-parameterized model was first estimated. This model contains more parameters than the original model by including the preceding values of the variables in the model. The aim is to examine the effect of past values of both the dependent and the independent variables on the current value of the dependent variable. The lag value of each variable is set at 3 based on Akaike information criteria (AIC). The results of the over-parameterized model are presented in table 5 below.

A glance at the results of the over-parameterized model showed that the model has a very high explanatory power. This is given by the high value of the adjusted R-squared of 0.9983 (99.83 per cent) and the adjusted R-squared of 0.9925 (99.25 per cent). The model is also statistically significant at all conventional levels. This is established looking at the high value of F-statistics (174.2644). To estimate the short-run error correction model for short-run dynamics, the statistically significant variables were selected and included in the error correction model, while the insignificant variables were dropped as required by the rule

TABLE 4
Over-parameterized estimation result

Dependent Variable: FSS

Method: Least Squares

Date: 01/13/20 Time: 11:46

Sample (adjusted): 1990 2018

Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.861676	0.879348	2.117109	0.0878
LR	0.523134	0.463604	1.128408	0.3104
LR(-1)	-0.082329	0.706467	-0.116536	0.9118
LR(-2)	0.199287	0.583155	0.341739	0.7464
LR(-3)	0.137189	0.400784	0.342301	0.7460
LQD	-0.049967	0.015923	-3.137940	0.0257
LQD(-1)	-0.007906	0.025947	-0.304678	0.7729
LQD(-2)	0.000357	0.016606	0.021497	0.9837
LQD(-3)	0.024388	0.021036	1.159357	0.2987
M2	0.006008	0.006667	0.901107	0.4088
M2(-1)	0.004106	0.012071	0.340156	0.7476
M2(-2)	0.012269	0.013583	0.903274	0.4078
M2(-3)	0.020835	0.006662	3.127318	0.0260
INF	-0.041967	0.024110	-1.740625	0.1422
INF(-1)	-0.014693	0.024713	-0.594549	0.5780
INF(-2)	-0.008763	0.027391	-0.319930	0.7620
INF(-3)	-0.021819	0.021237	-1.027427	0.3513
ECM(-1)	-0.200244	0.518465	-0.386225	0.7152
R-squared	0.998315	Mean dependent var	7.015731	
Adjusted R-squared	0.992586	S.D. dependent var	1.785514	
S.E. of regression	0.153737	Akaike info criterion	-0.867980	
Sum squared resid	0.118176	Schwarz criterion	0.020667	
Log likelihood	27.98178	Hannan-Quinn criter.	-0.644488	
F-statistic	174.2644	Durbin-Watson stat	2.183415	
Prob(F-statistic)	0.000009			

Source: Researcher's computation from E-views

TABLE 5
Parsimonious result

Dependent Variable: FSS
Method: Least Squares
Date: 01/13/20 Time: 11:52
Sample (adjusted): 1990 2018
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.340721	0.556491	4.206212	0.0006
LR	0.811655	0.037665	21.54929	0.0000
LQD	-0.042556	0.017979	-2.366984	0.0301
M2(-3)	0.030153	0.005474	5.507949	0.0000
INF	-0.048212	0.015987	-3.015638	0.0078
ECM(-1)	-0.243349	0.494849	-0.390724	0.7009
R-squared	0.986680	Mean dependent var	7.015731	
Adjusted R-squared	0.982763	S.D. dependent var	1.785514	
S.E. of regression	0.234421	Akaike info criterion	0.156066	
Sum squared resid	0.934208	Schwarz criterion	0.452282	
Log likelihood	4.205242	Hannan-Quinn criter.	0.230563	
F-statistic	251.8609	Durbin-Watson stat	1.719119	
Prob(F-statistic)	0.000000			

Source: Researcher's computation from E-view

Parsimonious short-run analysis

The results of the short-run dynamics as presented in table 5 above. The results showed that the parsimonious short-run model has a good fit on the data. This is given by the high value of the R-squared of 0.9866 (98.66 per cent) and the adjusted R-squared of 0.9827 (98.27 per cent). According to the adjusted R-squared, about 98 per cent of the systematic variations in evaluating factors that influence deposit insurance in Nigeria have been explained by changes in loan recovered, liquidation dividend, broad money and inflation. In the same vein, the high value of F-statistics (251.860) shows that the overall model is statistically significant. The overall significance of the short-run model implies the joint significance of all explanatory variables in explaining short-run changes in evaluating factors that influence deposit insurance in Nigeria. Further examination of the result shows that there is no problem of autocorrelation in the model. This is so because the Durbin-Watson (DW) statistic value of 1.72 falls within the acceptable region of no autocorrelation. From the policy stance, this means that the finding of this study can be applied for policy purposes in the Nigerian insurance sector. Meanwhile, the error correction factor has a negative sign and statistically significant as theoretically expected. The coefficient of the error correction factor shows that about 24 per cent of the short-run disequilibrium has been corrected each year. This is rather an acceptable speed of adjustment from short-run disequilibrium to long-run equilibrium. By this result, 2.88 (0.24 of 12months) months is required to return to the equilibrium position. Analysis of the short-run estimates further showed that changes in the current period of loan received have a positive

significant impact on the current value of the deposit insurance in Nigeria. The result also revealed that changes in the current period of liquidation have negative and significant effect on evaluating factors that influence deposit insurance in Nigeria in the short-run. A one per cent increase in the current period of liquidation will result in a negative change in the current value of the deposit insurance in Nigeria by 0.0425 or 4.250 per cent all things being equal.

Similarly, the variations in the current value of inflation will lead to a significant but negative effect on evaluating factors that influence deposit insurance in Nigeria in the short-run by 0.0482 or 4.82 per cent *ceteris paribus*. This means that, a unit increase in the current value of inflation would result in a negative change in the current value of the deposit insurance in Nigeria in the short-run by 4.82 per cent.

Finally, further investigation of the results showed that the previous periods (lagged three) of broad money has a significant and positive impact on the current value of deposit insurance determination in Nigeria in the short-run by 0.0301 or 3.01 per cent. This means that, a unit increase in the current value of broad money would result in a positive change in the current value of deposit insurance in Nigeria in the short-run by 3.01 per cent.

Findings

1. Loan recovery efforts of Nigerian Deposit Insurance Corporation (NDIC) have indeed had some significant positive effects on the level of banking system stability in Nigeria.
2. Nigerian Deposit Insurance Corporation (NDIC) compensation to depositors of failed banks, through the payment of liquidation dividends has actually impacted significantly on the level of banking system stability in Nigeria.
3. The level of money supply in the financial system over the years has significantly impacted on the stability of the Nigerian banking system.
4. Inflation has a positive influence on the level of banking system stability

Conclusion and Recommendations

In conclusion therefore, this study has attempted to address the growing impression that regulatory authorities in Nigeria lack empirical evidence as to whether the continued banking instability is as a result of structural problems or regulatory inconsistencies. Findings from analysis of the research objectives have yielded empirical evidence that loan recovery efforts of the NDIC over the years have had significant negative impact on the level of banking system stability in Nigeria, that the attempt by NDIC to compensate depositors of failed banks, through the payment of liquidation dividends, impacted positively on the level of banking system stability in the country, and that the level of developments in the financial system over the years have actually had significant influence on the stability of the Nigerian banking system. The following recommendations are made:

- i. This study will serve as a working paper for policy makers on the way forward to improving deposit Insurance administration in Nigeria.
- ii. The current loan recovery strategies being adopted by the Nigerian Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN) should be reviewed or changed completely. The use of forceful means to recover debts from customers of failed/distressed banks should be discontinued and appropriate legal procedures followed.
- iii. The country's debt recovery and bankruptcy laws should also be completely reviewed. This will allow debts owed to such banks to be recovered through more civilized judicial processes, without exacerbating the stability in the entire banking system.

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