

Macroeconomic Performance and Banking Industry Performance Nexus: A Perceptual Evidence from Nigeria

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Abstract

The main objective of this study is to through perceptual econometric analysis explore the relationship between macroeconomic performance proxied by macroeconomic stability and financial performance of the Nigerian banking Industry. The study employed Generalised Method of Moments technique in a firm-level analysis of 120 bank branches and 2400 customers in Nigeria. It was revealed that at the 1

Index terms— macroeconomic performance; financial performance; perceptual analysis.

1 Introduction

anks are financial intermediaries that provide special functions which include brokerage, acting as agents for their customers in providing information and transactions services. They also act as asset transformers by issuing far more attractive financial claims to household and corporate savers than the claims directly issued by corporations (Saunders, 1994). The role banks play in an economy is so important that the failure of a large bank could be worse than that of any other institution in an economy (Saunders, 1994).

Despite the importance of the banking industry in an economy, the Nigeria banking industry has been facing numerous challenges. It is dominated by few banks. In terms of Shareholder's funds, as at December 2014, five banks dominated and represented 48.52% of capitalization of the entire banking industry. The top five banks also had 2,478 branches which represented 46.34% of the total branch network in the country ??CBN, 2015). According to Klynveld Peat Marwick Goedeler (KPMG, 2013), only about 20% of Nigeria's population is banked. Two-third of this population has never been banked before. The number of branches of Nigerian banks decreased from 5,639 to 5,526 in 2014 representing 2% decline in branch concentration. The ratio of bank deposit to GDP nosedived from 20.7% to 19.97% in the same year. Compared to other sectors, the banking industry contributed 2.63% to GDP which is below the contributions of the telecommunications (9.28%), real estate (7.72%), crude petroleum and natural gas (13.70%) respectively ??CBN Bulletin, 2014). In terms of domestic credit to the private sector as a ratio of GDP, the Nigerian banking industry with about 14.5% is behind the world (84.5%) Sub Saharan Africa (28.2), Low Middle Income (40.6), South Africa (67.2), Kenya (34.1) and Cameroon (15.5) respectively. Profitability of the industry declined from N601.02billion in 2014 to N113.827billion in ??2015 The macroeconomic environment where the Nigerian banking industry operates has in recent times not been favorable. GDP growth rate consistently declined after the last quarter of 2013. From 6.77%, it declined to 5.94% in 2014, further declined to 2.11 in the fourth quarter of 2015 and experienced negative growth through 2016 (-0.36, -2.06, -2.24 and -1.3 in the first, second, third and fourth quarters respectively). Economic recession was confirmed in the second quarter of 2016 which worsened even in the fourth quarter. The negative growth rate of output was attributed to decline in global prices of crude oil which adversely affected the foreign exchange earnings of the country highly dependent on crude oil export. This was further worsened by disruptions in oil production by militants in the Niger delta region reducing it from 1,757 BBL/D/1K (thousand barrels per day) in January to From the above, the broader economic environment in Nigeria has been characterized by depressed output, negative growth rates worsened by downward trajectories in oil prices, rising general price level, fast depleting external reserves, external imbalance caused by exchange rate instability and uncoordinated fiscal-monetary

policy stance (CBN, 2015). These factors for which banks typically have little or no control may have adversely affected the banking sector and undermined their abilities to play their crucial roles in the economy (Osamwonyi & Micheal, 2014). The dwindling performance of the Nigerian banking industry may not be unconnected to the decline in economic activities. It is therefore important to empirically answer the question 'does macroeconomic performance affect banking industry performance in Nigeria?' Since customer sophistication has been found to also determine financial performance, this study will utilize the perception of bank managers and customers in analyzing the relationship between macroeconomic performance and banking industry performance in Nigeria.

2 II.

3 Literature Review

Literature is replete with findings on the relationship between macroeconomic performance and banking performance. However, there have been contrasting results.

Macroeconomic stability was found to significantly affect performance via customer loyalty (Roberts, 2011). Customer loyalty decreased after an economic recession. This was found in a study of the impact of economic recession on bank customer loyalty. Using Chi-square test, Pearson correlation and ANOVA from questionnaires administered to 300 respondents in the UK, the decrease in customer loyalty as a result of recession negatively impacted banking performance in Pakistan, Nayebezhadeh et al (2013). Sheefeeni (2015) in a study of the relationship between macroeconomic variables and banking industry performance in Namibia employed unit root, cointegration, impulse response functions and variance decomposition on quarterly data spanning from 2001-significantly influence banking sector performance. In the same year, Simiyu (2015) in an examination of the effect of macroeconomic variables on profitability of commercial banks listed in the Nairobi Securities Exchange, employing panel data and fixed effect analysis found GDP, exchange rates and interest rates insignificant predictors of commercial bank's profitability. Olaoye and Olarewaju (2015) in a panel data analysis relating internal bank specific and macroeconomic indicators to the overall profitability of banks in Nigeria did not find a significant interaction amongst the variables. Akani & Nwanna (2016) employing multiple regression model, Johansen Cointegration test, Vector error correction modeling and Granger Causality tests found that macroeconomic variables insignificantly affected banking industry profitability in Nigeria. In a correlational research design and using OLS technique on an annual data spanning 2008-2012, macroeconomic variables such as Real GDP, Inflation and Exchange rate were not found to significantly affect banking profitability in Kenya (Evans & Kiganda, 2014). Using Pooled OLS method in a study of the impact of macroeconomic variables on profitability of public limited commercial banks in Pakistan, Kanwal & Nadeem (2013) demonstrated the non-existence of a significant relationship between real GDP, interest rate and inflation. In a similar study in Kenya, Ongore & Kusa (2013), employing panel data analysis did not find any relationship between the variables.

On the otherhand, Combey & Togbenou (2017) in a similar empirical investigation in Togo, employing Pool Mean Group Estimator found that in the long run, GDP growth, real effective exchange rate and inflation significantly impacted on banking sector profitability. Employing Vector Error Correction Model in an analysis of the influence of macroeconomic variables on the performance of Indonesian Islamic banking, Patrama (2015) found a short term shock of banking performance to fluctuations in macroeconomic variables. A stable relationship was confirmed in the long run. Osamwonyi & Michael (2014) in a study of the impact of macroeconomic variables on the profitability of listed commercial banks in Nigeria in a pooled data spanning 1990 -2013 found that interest rate and inflation were the main macroeconomic variables found to influence banking performance. Carvallo and Pagliacci (2014) in an empirical study of the Venezuela banking industry found that banking sector instability results from growing interest rate and domestic currency appreciation. A significant relationship was found to exist between macroeconomic variables and banking financial performance in a correlation and regression analysis carried out by Ongeri (2014) 2014. He found that macroeconomic variables did not caused banking sector performance growth in an Ordinary Least Squares and Impulse response analysis. Using a confidential supervisory bank-level data set, Gerlach, Pend and Shu (2005) found that increase in the risk of non-performing loans of banks significantly responded inversely to economic growth in Hong Kong. Changes in interest rate, exchange rate, unemployment and aggregate demand explained significantly the behavior of banking performance in Singapore. This was found in a study carried out by Clair (2004). Specifically, 2/3 of change in performance was explained by these variables. Gizycki (2001) discovered a strong influence of macroeconomic variables on bank's risk and profitability in Australia using fixed effect modeling and impulse response function.

From the literature reviewed above, it is clear that there are contrasting views about the relationship between macroeconomic variables and financial performance of banks. Some studies found a positive significant relationship whereas others found no such relationship. Also, few studies to the best of the researcher's knowledge have been conducted in Nigeria. Most of the studies used secondary data analysis models. The use of secondary data especially in developing economies is usually fraught with computational biases and usually not a true reflection of reality. None of the studies used perceptual approach to investigating the relationship. This study intends to fill these gaps in literature.

4 III.

5 Methodology

The research design chosen for this work combines between-subject multivariate and covariance survey designs. Systematic probability sampling technique is adopted for sampling design.

The population of this study is the customers of Deposit Money Banks (DMBs) in Nigeria. These banks have a total of five thousand, three hundred and forty nine (5,349) branches spread across the six geopolitical zones of the country. They include, North Central (808), North East (269), North West (549), South East (624), South South (861) and South West (651) representing 15.1%, 5.02%, 10.27%, 11.67%, 16.10% and 12.17% of the total population respectively. The population of bank branches in Lagos State (1587) represents 29.67% of total branch population in Nigeria (NDIC, 2014). 120 branches of the top ten banks in Nigeria were chosen for this study. The banks were selected based on their relative branch network, total assets and shareholders' funds. The banks are, Access Bank, Diamond Bank, Ecobank Nigeria, First City Monument Bank, First Bank of Nigeria Plc, Fidelity Bank, Guarantee Trust Bank, Union Bank, United Bank for Africa, and Zenith Bank. These banks have a total of about 3738 branches in Nigeria, representing 69.90% of the total population. Firm-level sample was adopted for this study. A bank's branch is taken as a firm-study unit. This is similar to the works of Christina and Gursay (2009) and Adiele, Miebaka and Ezirim (2015). This implies that the banks selected for the study and their customers make up the sample size for the study.

To elicit information on each bank unit performance, a questionnaire was administered to one Manager (Operations/Service manager) of the banks. In addition questionnaires were administered to twenty customers of each bank unit. This gives a total of two thousand, four hundred customers and one hundred and twenty managers making a total data point of two thousand five hundred and twenty.

Questionnaires which have been adjudged the most suitable instrument of carrying out primary research survey (Babbie and Mouton, 2003), is the main instrument used in eliciting information from respondents in this study. Off-line administration of the questionnaires is adopted. Though this method makes the exercise more rigorous, costly and extensive, it has the attendant benefit of reducing biases associated with on-line responses thereby improving efficiency of the process. The questionnaire method also shows the psychological disposition of the respondents. The Likert scale will be used in the questionnaire design (Gupta, 2013).

Two categories of questionnaires were designed for this study. This is in tandem with the objectives of the study. The first category is designed to elicit information on the DMB unit performance. This will be administered to the Manager of the DMB unit. The second category will be addressed to customers to elicit information on their perception of macroeconomic stability.

A Pilot study, which is a pretest measure of fitness of the instruments used for the study was carried out using First Bank Plc and Guarantees Trust Bank Plc, both University of Benin branch. The choice of these banks is based on their relative contribution to the overall branch networks, asset size and shareholder's value.

Cronbach Alpha test was conducted to determine the reliability and extensiveness of the findings as contribution to knowledge (Yee, Yeung & Cheng, 2008; Christina and Gursay, 2009 and Babbie and Mouton, 2012).

Three students were recruited and trained by the researcher to administer and retrieve the questionnaires as research assistants. They were to administer the questionnaires to managers who had been reached earlier by the lead researcher and have consented to the request of administering the questionnaires. The exercise was carried out during the second semester holiday (August-November, 2017).

The questionnaires were administered on some particular days and time of the week for consistency.

The choice of days and time depended on the traffic of customers and relative convenience of the bank managers. These were determined by the outcome of the pilot survey.

After retrieval, the questionnaires were coded and analyzed by the researcher.

6 a) Data and Variable Measurement

Consider a bank branch unit k and $k \leq K$ where K represents the sample size of branches of the DMBs in the Nigerian banking industry selected for the study. From preceding section, K is 120.

Also, let I customers be selected from k . Then, a customer selected from k is denoted as i such that $i = 1, 2, \dots, I$. I is the sample size of customer drawn for the study.

To estimate the relationship between macroeconomic stability and corporate financial performance, we have to compute indices of the average perception of customers of each bank unit as to the stability of prices and economic growth of the region where the branch is located and the corporate performance for each k (i.e the selected DMBs for the analysis) where $k = 1, 2, \dots, K$.

Adopting the methods employed by Powell (1992)

7 b) Index of DMB Financial Performance

The index of financial performance for bank k is derived from Questionnaires A (questionnaire for the bank Manager). The choice of perceptual data on performance is not new in literature. It had been employed by

Powell (1992), ??taw and Epstein (2000), ??elaney and Huselid (1996), Yee, Yeung and Cheng (2008) and Christina and Gursoy ??2009).

The index of financial performance for the k DMB is given as, $\mu_{ik} = \frac{1}{v} \sum_{i=1}^v \text{QA}_{ibk}$

Where, PERF k is the Corporate Performance Index for k DMB. QA_{ibk} is the response to the ith question by the business manager b of DMB k in questionnaire A, and ? stands for the total number of bank's performance related questions in questionnaire A. v is the number of alternatives for each question in the questionnaires (since the Likert scale of 5 alternatives will be employed for this study, v = 5).

The definitions and measurement of all the other variables in this study are presented in Table 1.

8 c) The Estimation Technique i. The Generalized Method of Moment (GMM) estimators

The GMM has been described by (Greene, 1993) as an extension of the oldest formalized theory of estimation pioneered by Fisher ??1925). As an estimator of a true parameter vector, it is obtained by finding the element of the parameter space that sets linear combinations of the sample cross products as close to zero as possible ??Hansen, 1982). These methods of estimation and inference have been applied to a wide range of problems in economics.

The GMM estimator is computed by minimizing the quadratic form $W_m q' = 1$ and, $q' + q' = 1'1$

Where, W is the asymptotic variance/ covariance matrix for the orthogonality conditions m or the weight factor. The optimal GMM estimator of the parameter is obtained by choosing W so that it converges to the inverse of the long run co-variance matrix. Z_t is a subset of variables in the current information set and is used to capture the instruments in the model. q is the moment condition to be minimized and T is the entire time period that is used to obtain the average moments.

Assume a sample of observation of a random variable is given as w. If z and x are random subvectors of w, then they contain some or all the elements of w. Hansen (1982) estimated a vector of parameters ? from unconditional moments $E[g(?_0, w)] = 0$, given a known vector valued function g. Different variants of GMM will yield asymptotically efficient estimates of ? given the orthogonal conditional moments $E[g(?_0, w) | Z=z] = 0$.

We construct the standard unconditional GMM estimator ?₀ as follows,

The unconditional GMM estimator $\hat{\theta}_{GMM}$ given an r x1 vector of 'instruments' a(X_t) with r ? p (which possibly depend on ?₀) can be defined as any solution of the optimization problem; An obvious advantage of the GMM approach to estimation is that it provides a way to specify the optimal choice of weighing matrix W_N. This is what makes it more efficient than some other estimators like the Two Stage Least Squares Estimator. () [] [] , , 1 , 1 min 1 , 1 ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? = ? ? n t t n n t t n Z f n W Z Y h X a Z f ?

Their large sample properties are easy to characterize from parametric assumptions. The GMM moves away from parametric assumptions towards estimators which are robust to some variations in the underlying data generation process ??Greene, 1993). It allows the use of all available information in the estimation process ??Bernat, 2011). For cross-sectional applications like this study, the standard procedure for estimating interrelationships is the maximum likelihood estimator ??Cameron and Trivedi, 2005). However, as the authors noted, when complications such as endogeneity or correlations across observational units arise (which we anticipate in this study) it is convenient to use moment-based estimators and in the most general case is the GMM estimators. Li, Magee and Sweetman (2013) found GMM suitable for dealing with sample size and endogeneity biases in survey data. It is on these grounds that we intend to use the GMM to estimate the relationship between manager's sex, customer loyalty corporate financial performance in the Nigerian banking industry.

9 d) Model Specification

Based on the literature review in the previous section, the model for this study is specified below; Functionally, () i Z MACROSTAB f PERF , =5

Where, PERF is financial performance of the bank, MACROSTAB is macro-stability and Z_i represents a vector of control variables. Specifically, e Z macrostab PERF_{m i i} + + = ? = 1 1 ,

? ? 6 Z 1 -Z 5 represents bank manager sex, manager's employment status, bank brand and security of the bank. The definitions and measurement of the control variables are presented in Table 1.

? 1 is a parameter representing the coefficient of macroeconomic stability while ? 1? 5 are parameters representing the coefficients of the control variables respectively. e_{is} the stochastic error term.

It is expected that positive and significant relationships exists between macroeconomic stability, bank brand and security and financial performance of banks. Therefore the a-priori expectation is; ? 1 > 0 and ? 3-5 > 0. It is not certain what the apriori expectation of sex of manager would be.

10 IV.

11 Discussion of Findings

A total of 106 out of the 120 banks proposed participated in the survey. This represents a response rate of 83.33%. Also, 1709 questionnaires were retrieved from the customers of the 106 banks that responded to the survey representing a response rate of 80.61%. The demographic characteristics of the managers revealed that 74 of the managers representing 78.95% are males. 84 managers representing 79.25% have academic qualifications higher than B.Sc. 56 of the managers were in mid-management employment cadre. 977 representing 57.17% of the customers surveyed are males. Only 15.62% of the customers maintain a current account with the banks.

12 a) Reliability of Instruments

Prior to the main survey, a pilot survey was carried out in banks in the University of Benin. This was to test the reliability of instruments employed. The Cronbach Alfa for both manager's survey and customer's survey are 0.73 and 0.77 respectively. These exceed the threshold of 0.7 which is recommended (Christina &Gursoy, 2009) thereby confirming the reliability of the instruments. This study is basically aimed at empirically investigating the relationship between macroeconomic performanceand the financial performance of Nigerian banks. Table 2 shows the descriptive statistics of variables employed in the study. The, means, standard deviation and Jaque-Bera statistics of these variables are presented in table.

From table 2, the means of financial performance (PERF), macroeconomic stability (MACROSTAB) and manger's sex (MANSEX) are 3.389, 2.316 and 1.37 respectively. The mean of banking performance implies that on the average each banks performance compare similarly to the bank-wide average performance. The mean of macroeconomic stability shows that on the average, customers of the Nigerian banking industry perceive that there is low level of macroeconomic stability and growth in the economy. The Standard deviations of the variables show a moderate dispersion from the means of the variables. The JaqueBera statistic reveals that all the variables except manager's sex are normally distributed. ^{1 2 3}

Terrorism index had increased since 2010. The index was 6.31 in 2010, increased to 7.96 in 2012 and further increased to 9.31 in 2015 representing a 47.54% increase in the 2010 figure.

Figure 1:

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Global Variable	Variable	Description	Man-	Measurement*
Jour- nal of Man- age- ment and Busi- ness Re- search	No- ta- tion PER- FORM- ANCE BRAND/ Image SE- CU- RITY MACRO- eco- nom- ic Sta- bility Em- ploy- ment status SEX	Finan- cial Perfor- mance Brand/ Image of cus- tomer's bank Stabi- lity of Funds Macro- econom- ic Sta- bility Em- ploy- ment status Sex of Managers	ager's response on profitability of the branch compared to the bank- wide average Customer's perception about reputation, trust and integrity of the cus- tomer's bank in public's view Customers perception about the security of his funds with the bank Customer's perception about the stability of prices and growth of output in the region where the bank is located Employment status of manager	My branch's profit in the last quarter is above the average of other banks in the region My branch's reputation is better than other banks in the region I trust the integrity of the bank I am satisfied with the service of the bank I am satisfied with the security of my funds with the bank I am satisfied with the stability of prices and growth of output in the region where the bank is located I am satisfied with the employment status of the manager

Male

Female
Source:
Au-
thor

[Note: Note: * Each question except for Sex is on a likert scale of 1(strongly disagree) to 5(strongly agree). The average score is a measure of the variables]

Figure 2: Table 1 :

2

Variable	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
PERF	3.389	0.475	-0.014	2.602	0.689	0.708
MACROSTAB	2.316	0.771	0.099	2.675	0.627	0.731
MANSEX	1.365	0.540	1.476	6.315	85.366	0.000
EMPL	4.019	0.788	-0.393	3.187	2.823	0.244
BRAND	3.821	0.329	0.146	2.669	0.844	0.656

[Note: Source: Author's survey, 2017.]

Figure 3: Table 2 :

3

Variables	Financial Perfor- mance	Macro stabil- ity	Manager's Sex	Manager's em- ploy	Brand	Security
Financial Perf.	1.000					
Macro stab	0.128	1.000				
Manager's sex	0.209	0.108	1.000			
Manager's empl	0.225	0.013	0.006	1.000		
Brand	0.249	0.089	0.144	0.124	1.000	
Security	0.010	0.735	0.018	0.099	0.100	1.000

Source: Author's survey, 2017

c) Correlation Analysis

The correlation result reveals that a positive relationship exists between macroeconomic stability and performance of banks in Nigeria.

Figure 4: Table 3 :

From table 4, the coefficient of determination (R^2) of the model is 0.334. This implies that 33.4% of the systematic variation in financial performance is explained by the variables in the model. For a primary data based study of this nature, the coefficient of determination of the model is impressive. One of the criteria for employing the GMM technique is the probable existence of endogeneity in the model and the assurance of the applicability of strong instrumental variables. This was not a problem in this model. This is evident with the J-stat value of 14.447 and probability of 0.417. The null hypothesis of weak instrumental variables is therefore rejected.

Macroeconomic stability which is a proxy for macroeconomic performance has a coefficient of 0.591 with corresponding probability of 0.000. This implies that at the 1% level of significance we cannot reject the hypothesis that macroeconomic performance significantly affects the performance of the Nigerian banking industry. Specifically, a unit change in macroeconomic stability will result in a 0.591 increase in financial performance of Nigerian banks. This is in line with the findings of Robert (2012).

The sex and employment status of managers seem to also influence their bank's financial performance significantly. A unit increase in the female managers of bank increases profitability of the bank by 32.5%, with coefficient and probability of 0.325 and 0.008 respectively, at the 1% significance level. Also, given coefficient and probability of 0.284 and 0.005 respectively, an improvement in the employment status of managers in the banks will enhance banking performance by 0.284 unit. We therefore accept the hypothesis that sex and employment status of managers also significantly enhance bank financial performance in Nigeria.

With coefficients and probabilities of 0.107 and 0.015% respectively, security significantly influenced bank's performance positively at the 5% level. The implication of this is that the higher the perception of security, the more loyal customers become and the higher the profitability. This conforms to the findings of Agwu, Atuma, Ikpefan and Aigbiremolen (2014). Bank's brand was also found to influence profitability at the 1% level of significance with coefficient and profitability of 0.455 and 0.000 respectively. This implies that the better the image of a bank in public's eye, the more profitable the bank becomes.

V.

1 Conclusion

An explanation to the causes of the declining performance of the Nigerian banking industry necessitated this empirical study. Coincidentally, there has also been a dwindling of the macro-economy. Previous studies that examined the relationship between macroeconomic stability and banking performance have contrasting views. Whereas some researches observe a significant relationship, others do not. None of the studies utilized perceptual analysis. This study therefore examined the relationship between macroeconomic performance and financial performance of the Nigerian banking industry using a perceptual approach. The study found that macroeconomic stability enhances financial stability of the banking industry. Conversely, macroeconomic instability will undermine the performance of banks in Nigeria. A stable economy engenders investor's confidence in the financial system, encourages the flow of cheap liquidity to banks via deposit mobilization by customers and eases the ability of bank managers to satisfy their customers thereby enhancing the profitability of the industry. Prudential macroeconomic policies aimed at sustainable growth amidst stable prices should be vigorously pursued in order to improve the Nigerian banking industry's performance. It also recommended that such perceptual investigations be carried out in other parts of Africa.

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