

Analysis of Bank Effectiveness in Nigeria

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ABSTRACT

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The objective of the paper is to analyse the effectiveness of Deposit Money Banks (DMBs) in Nigeria in the period following the 2005 consolidation exercise in the banking sector. In this study, declining interest rates margins and increasing private sector credit have been used to proxy effectiveness. To achieve this objective, econometric and statistical tools are utilized to analyse annual times series data spanning the period from 2005 to 2013 on the 18 Deposit Money Banks that are quoted on the Nigerian Stock Exchange (NSE). The analysis indicates that commercial banks in the country within the sample period were generally very effective as it finds significant positive relationship between credit extended to the private sector and the banks' interest margins. The study therefore recommends intensification of effort by the DMBs towards increasing credit extended to the private sectors. To this end there is need to mobilize more funds from the public in form of deposit which is the main determinant of loans and advances extended by lending financial institutions. It is also recommended that DMBs should ensure that loans are extended to borrowers who are credit-worthy, so as to reduce significantly, the incidence of repayment defaults and bad debts.

KEY WORDS: *Deposit Money Banks, Bank Effectiveness, Interest Margins, Bank Credit, Banking Sector Consolidation, Bad Debts*

Introduction

Bank effectiveness refers to gains associated with reduced operating costs and enhanced profitability resulting from larger scale of operation of the Banks (economies of scale), which have been passed to the customers of the banks in the form of lower charges on their services. It measures the extent to which banks have delivered higher credit to the private sector at lower interest rates in response to the economies of scale which they enjoy as well as the extent to which return on equity has been affected by economies.

A system is said to be effective if it produces an intended result. Following from this, the banking system would be described as effective if it

produces its intended results. In this case, one may ask: what are the intended results? Who sets these intended results? In a country like Nigeria, intended results that are expected from the Nation's Banks are set by the regulatory authorities such as the Federal Government through the Central Bank of Nigeria (CBN) and the Nigerian Deposits Insurance Corporation (NDIC). These results are beside the profit motive which serves the narrow interest of the banks' shareholders. The results are those that serve the interest of the whole economy.

National Planning Commission (2004) in the National Economic Empowerment and Development Strategies (NEEDS) document states

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the intended results of banks in Nigeria as: maintaining low real lending rates, restructuring the composition of credit to the private sector to boost production, providing more credit to the private sector, especially long-term credit for real sector development, significant reduction in the incidence of bad and doubtful debts.

From this list, it is not in doubt that the banks have the key role in pricing and trading risks. Once this is efficiently done, every other thing including reduction in bad debts, may fall in place. Banks effectiveness means gains associated with reduced operating costs which resulted from efficiency in service delivery that has been transferred to the banking public through reduced charges. It is the efficiency that is associated with performance of banks' services such that the customers and the general public get satisfaction.

Levrva and Van Den Berghe (2007) state that Banks effectiveness means the degree the bank is able to carry out its strategic functions to the satisfaction of its customers. However, the European Central Bank (2010) opines that the main function of the banks is that of intermediation (saving mobilization and allocation of credits). It further states that a bank is effective if it performs its intermediation functions satisfactorily. Thus if a bank mobilizes savings and allocates credits to the satisfaction of customers who are in-fact members of the public; such bank can be said to be effective.

Customers' satisfaction can be seen from the point of view of what the Government and the regulatory bodies intend to achieve through the banks in their over-all strategic plan for the development of the entire economy. The NEEDS document declares that banks are expected to satisfy customers by maintaining low real lending interest rates and providing more credits to the private sector. It further maintains that effectiveness of banks in this function would be seen in the reduction in bad debts.

The banks' main service is lending. The

customers/public will be satisfied if the banks lend more to the private sector at the lowest possible rates. In this study, declining interest rates margins and increasing private sector credit have been used to proxy effectiveness. Therefore, this study aims to gauge the effectiveness of the Nigerian banks by charting their deposits and lending rates as well as the ratios of their loans to private sector/GDP, over the nine year period immediately preceding the banks' consolidation programme. Falling lending rates and higher 'return on equity' coupled with rising private sector credits, would mean improvements in banks effectiveness.

The objective of this study is to investigate the effectiveness of Nigeria's banking system. Very few papers have investigated bank effectiveness in the country. This study will therefore be a contribution to the existing literature by giving it an econometric touch.

Literature Review

Few empirical studies exist on the study of Banks Effectiveness. However, Hauner and Peiris (2005) in a study of Ugandan Banks used the behavior of the average interest margin over the study period to assess their effectiveness. Hardy (2005), while assessing Pakistan Banks effectiveness relied on the behavior of interest margins and bad debts ratios over the study period.

On the Nigerian scene, studies on bank effectiveness are scarce but Adeyemi (2009) studied Nigerian banks' performances in relation to the achievement of the lofty objectives of the Federal Government of Nigeria when she embarked on banking sector reforms. The reforms which had as its fulcrum; increased sizes of banks, was designed to ensure the safety of depositors' money and allocate credits to deserving sectors of the economy (Lemo, 2005). The study used the spread between deposits and lending rates as index of improvement or otherwise in intermediation process. The study also charted the

movement of the lending rates to see whether it fell in response to increasing credits of the banks. It concludes that, indeed interest margin narrowed in response to falling rates and customers benefited as a result.

Imala (2009) analyses the ratios of bad debts / total loans of banks in Nigeria, for both the pre and post consolidation periods in a comparative form and finds that the ratios of the bigger banks in the post consolidation era are lower than their pre-consolidation counterparts. This indicated effectiveness on the parts of the banks in terms of resource allocation.

Williams, Ogege and Ideji (2014) employ queuing regression analysis to analyse the effect of effective customer service on bank profitability in Nigeria using a sample of five big banks (First Bank of Nigeria Plc, Access Bank, Zenith Bank, Union Bank and Guaranty Trust Bank). The study finds that poor customer service management in banks leads to reduction in banks' profitability and financial distress.

Abuga and Manyange (2015) examine the effectiveness of mobile banking services in selected Deposit Money Banks in Rwanda using the one-way ANOVA statistical analysis technique. The study finds that the selected commercial banks used for the study were generally effective in the delivery of mobile banking services, and were most effective in security measures and privacy, time management and convenience and least effectiveness in financial risk measures. The study recommends that bank management ensures continuous strengthening of issues concerning security and privacy in mobile banking, create sensitization programmes for mobile banking services and adopt modern technology that meet the demand of the trends in mobile banking services.

Raphael (2013) evaluates the efficiency, effectiveness and performance of Tanzania Deposit Money Banks using a two stage analysis derived from the DuPoint model estimated with

the Innovative Data Envelopment Analysis. The results of the analysis reveal that the overall performance estimate scores were low, particularly with respect to efficiency and effectiveness scores. Further evidence from the study was that the largest foreign banks were more efficient through the entire period of the study while the smaller banks were more effective than the larger banks. Large domestic banks hold the last position in terms of efficiency and effectiveness and performance.

Jaouadi and Zorgui (2014) investigate the effectiveness and efficiency of banks in Switzerland in the period from 1988 to 2011 using the ordinary least squares estimator. The study finds that banks in the country are quite effective and efficient in the provision of financial (banking services) and this enhances their reputation of Swiss banking system globally.

Kamarudin (2014) employs a two stage Data Envelopment Analysis (DEA) to assess the efficiency and effectiveness of ten Malaysian Islamic banks for the financial year ended 2011. The analysis shows that the average efficient score is more than the average effectiveness score, implying that Malaysian Islamic banks were more efficient rather than more effective. Further evidence from the study is that none of the banks in the sample exhibit best practice in both stages. This suggests that a bank may not be simultaneously efficient and effective.

Ferhi and Chkoundali (2015) compare the effectiveness of Islamic and conventional banks during current financial crisis using the stochastic frontier analysis (SFA) and Data Envelopment Analysis (DEA). The results indicate that most of the efficiency scores of Islamic banks are very close to those of the conventional banks, and that Islamic banks are slightly affected during current crisis, while the conventional banks are heavily affected by the financial crisis.

Model Specification, Data and Estimation

Methodology

Model Specification

In order to determine effectiveness of banks, several variables have been considered. The study specifies a model relating a measure of bank effectiveness to other bank specific factors affecting it. The choice of selected explanatory variables is based on empirical evidence from previous researches. The dependent variable is interest margin taken as proxy for bank effectiveness following Hardy (2005), while the explanatory variables are the unit cost of operation of banks, one-year lag value of return on equity and credit to the private sector (as a percentage of GDP). The relationship between these variables is expressed functionally as:

$$IM = f(TTA, ROE(-1), CPS_GDP) \dots\dots\dots[1]$$

Where IM = Interest Rates Margin measured as: Lending rates less Deposit rates

TTA = Unit operating cost

ROE (-1) = Previous year's return on equity

CPS_GDP = Credit to private sector as percentage of GDP.

The model is specified econometrically using the natural logarithm of the variables as:

$$LIM_t = h_0 + h_1 LTTA_t + h_2 LROE1(-1)_t + h_3 LCPSGDP_t + e_t \dots\dots\dots[2]$$

The variables are as previously defined. L stands for natural logarithm, e is the residual (error) term capturing other variables affecting interest margin, but not included in the model. h_1 , h_2 , h_3 are parameters indicating the effect the effect of the respective explanatory variables on the dependent variable.

The *a priori* expectations are: $h_1 < 0$, $h_2 > 0$, $h_3 > 0$ Increase in unit cost of operation of the commercial banks will engender reduction in interest margin. Thus a negative relationship is expected between unit cost and interest margin. Decrease in DMBs interest margins will lead to an

increase in private sector credit, which will cause returns on equity to rise in the next year (all things being equal). Increase in credit extended by commercial banks to the private sector is expected to increase the banks' net interest income if the extended loans do no turn to non-performing loans.

Data and Estimation Methodology

Data used for this study are time series data on 18 NSE quoted DMBs¹ spanning, 2005 -2013. They were sourced from the Central Bank of Nigeria (CBN) statistical Bulletin of 2013, the Nigerian Stock Exchange (NSE) Fact Book and the annual reports of the sampled banks.

The ordinary least squares estimation technique is employed for the estimations. This technique is adopted because it yields estimates that are BLU (best, linear, unbiased) (Koutsoyianis, 1985).

The estimations has been performed with the aid of EVIEWS 7.0

¹Banks included in the sample for the analysis are Afri-Bank, Access Bank Plc, Bank PHB, Diamond Bank Plc, ECO Bank, Fidelity Bank Plc, First Bank Plc, First City Monument Bank Plc, Guaranty Trust Bank Plc, Intercontinental Bank Plc, Oceanic Bank Plc, Skye Bank Plc, Stanbic IBTC Bank Plc, Sterling Bank Plc, United Bank for Africa Plc, Unity Bank Plc, Union Bank Plc, Zenith Bank Plc

Results and Discussion

Presentation and Analysis of Estimation Result

Table 1. Modeling Commercial Banks Effectiveness

Dependent Variable: LIM

Method: Least Squares

Sample (adjusted): 2005 2013

Included observations: 9 after adjustments

Convergence achieved after 81 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.425496	4.526757	-0.314905	0.7735
LTTA	0.131889	0.230547	0.572069	0.6073
LROE1(-1)	0.315768	0.864777	0.365144	0.7392
LCPSGDP(-1)	0.784291	0.133560	5.872203	0.0099
AR(1)	-0.488127	0.565964	-0.862469	0.4519
R-squared	0.910075	Mean dependent var	2.659321	
Adjusted R-squared	0.790176	S.D. dependent var	0.284179	
S.E. of regression	0.130173	Akaike info criterion	-0.970739	
Sum squared resid	0.050835	Schwarz criterion	-0.921088	
Log likelihood	8.882957	Hannan-Quinn criter.	-1.305615	
F-statistic	7.590317	Durbin-Watson stat	2.313869	
Prob(F-statistic)	0.063778			
Inverted ARRoots				-.49

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.134021	Prob. F(3,4)	0.9348
Obs*R-squared	0.730681	Prob. Chi-Square(3)	0.8660
Scaled explained SS	0.064475	Prob. Chi-Square(3)	0.9957

Source: Author’s estimation using EVIEWS 8

The result in table 1 shows that the model has a high goodness of fit as indicated by the coefficient of determination (R-squared) of 0.910075 which shows that about 91% of the systematic variations commercial banks interest margins are caused by the regressors: TTA, ROE

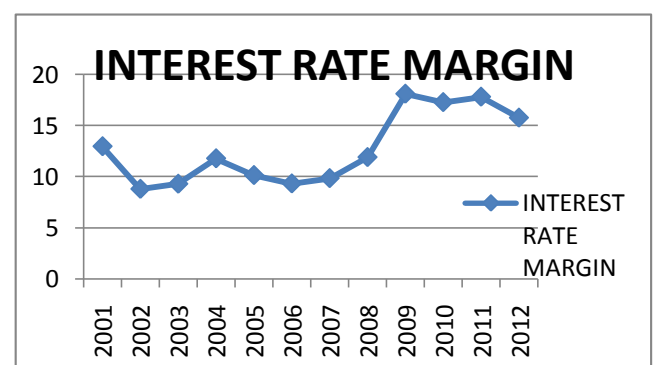
The estimation result of the model explaining bank effectiveness is presented in Table and CPS. The remaining 9% of variations is caused by exogenous factors to the model but covered by the error term. This observation is buttressed by the adjusted R² of 79% indicating that after adjusting for degree of freedom, the model still accounts for 79% of the variation in the dependent variable. The F-statistic of 7.59 passes the test of statistical significance at the 10% level as indicated by the p-value of 0.06378 suggesting that the explanatory variables are jointly significant in the determination of the dependent variable. There is no serial autocorrelation as the D.W. value which is 2.31 is greater than 2.

We observe that though all the explanatory variables positively affect commercial banks interest margins, only the effect of credit to the private sector passes the test of statistical significance at the 10% level. This is to say that credit extended by the commercial banks to their customers contributes significantly to their performance as measured by the net interest margin.

Graphical analysis

In this sub-section, we present a graphical analysis of Nigerian banks interest margin and credit to private sector to buttress the econometric (regression) result.

Figure 4.1. Interest Rates Margins

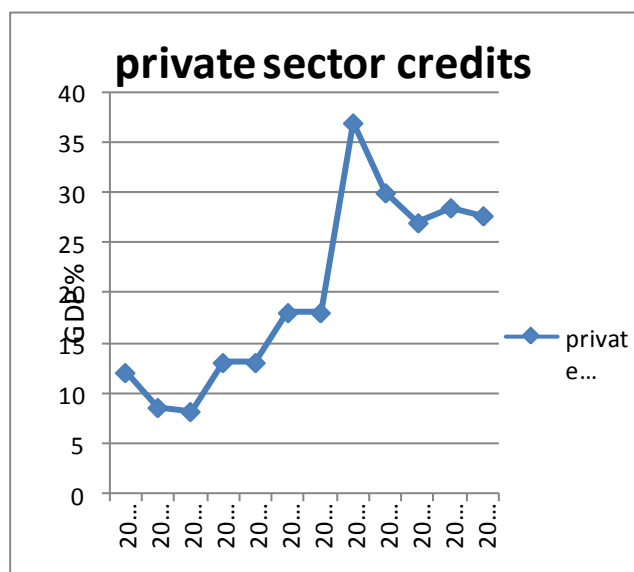


Source: Data from the Nigerian Stock Exchange Fact Book (2009).

Figure 4.1 shows the trend in interest rates margins for years 2001-2013. It shows a narrowing trend in the early post consolidation years and a sudden sharp rise in width in later years. Overall, the average margin in the pre consolidation years (2001 - 2006) was 10.58% as against 13.28% in the post consolidation years (2007 - 2012). This means that interest rates margins broadened by 26% in the post consolidation years. Rising interest means that banks could not translate lower unit cost into reduced interest so as to deliver more credit to the private sector. This falls short of the federal Government's stated objective that banks should provide more credit at more competitive interest rates.

This finding supports Emenuga (2002) which also finds a deteriorating interest margin in the post-consolidation period.

Figure 4.2: Banks' Credits to Private Sectors/GDP



Source: Data from the Central Bank of Nigeria Statistical Bulletin

Figure 4.2 indexes banks' credits to the private sector to GDP, recording a gradual increase from 12.1% in 2001 to 13% in 2009 before falling to 27% in 2012. These movements show an average ratio of 10.92% between 2001 and 2006 and an average ratio of 28% between 2007 and 2012. In

effect, credits to private sector grew by 256% in the post consolidation period.

A look at the trend reveals that the banks impacted on the private sector more significantly in the post consolidation years. The sharp increase in credit to the private sector was induced by the huge increase in banks' capital. This made so much funds available to banks that, it necessitated the banks creating new lending outlets. They were able to make more funds available for real production as against lending more to the public sector. This indicates a some-what effectiveness in credit distribution. In other words; taking funds from where they are less needed and transferring to where they are more needed. This met the federal Government's stated objective that banks should provide more credit to the private sector. On the whole more credit was allocated to the private sector; which shows banks' effectiveness in this area.

Conclusion and Recommendations

The paper employed the ordinary least squares estimation technique to analyse the effectiveness of commercial banks in Nigeria. Interest margin was used to proxy bank effectiveness, and the factors affecting bank effectiveness are investigated. The study finds that credit extended by the commercial banks to the private sector impacts positively and significantly on interest margin. This suggests that credit to the private sector contributed significantly to banks' performance in terms of narrowing interest margins. However, the effects of other variables – unit operating cost and return on equity – on interest margin were observed to be statistically not significant.

In light of the empirical evidence, it is recommended that in order to reduce their interest margins and increase their effectiveness, commercial banks in the country should focus on their core function of lending, especially to the private sector. In doing this, the banks should

carry out due diligence to ensure credits are channeled to private sector operators with the capacity to service and payback loans or credit extended to them. To increase their capacity to learn, commercial banks in the country should intensify efforts in mobilizing deposit from the public as customers' deposit is the main determinants of amount of loans and advances extended by commercial banks (Aigheyisi and Oaikhenan, 2014).

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