

DETERMINANTS OF DEPOSIT MONEY BANKS' PROFITABILITY IN NIGERIA

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ABSTRACT

The Nigerian banking system exhibits fluctuating profitability compared to other countries in the world. This study examines the determinants of bank profitability in Nigeria. It relates internal bank specific and macroeconomic indicators to the overall profitability of Nigerian banks based on Return on Asset as the measure of profitability. The study uses a panel of individual banks' financial statements from 2004 to 20012. According to the empirical results, Nigerian banks suffer from low quality of loans and do not monitor the repayment of the loans disbursed and more so, their assets cannot cover the amount of loan disbursed. This study also finds that macro economic variables do not have a major effect on bank profitability and inflation posed adverse effect on profitability. Most importantly, Sterling bank should react quickly to all the variables considered in this study, al nearly posed a negative influence on their profitability in that if these entire factors are properly monitored, they are likely to be better off in their performance.

INTRODUCTION

Banks as a financial institution has the major role of lubricating the gears facilitating the economic operations of a nation. The banking system plays a major role in moving funds from the saving units to the spending units. To mention a few, if a financial system is efficient, it should show improvements in profitability, increasing the volume of funds flowing from saver to borrowers, and provide better quality services for consumers. As financial intermediaries, banks play an important role in the operation of an economy. This is particularly true in the case of Nigeria where all other sectors have to relate with banks to carry out their operations effectively either as a debtor or creditor. Moreover, banks are the sole dealer of funds, and their stability is of great importance to the financial system. As such, an in depth understanding of determinants of their profitability is necessary and vital to the ability of an economy to resist crisis.

In banking literature, the determinants of profitability are empirically well explored although the proxy of profitability varies among studies. Some employed, Return on Asset, Return on Equity, Net Interest Margin, Return on Average Asset and so on. The objective of this paper is to examine the contribution of bank-specific as well as macroeconomic factors to the variation in profitability across banks and over time in Nigeria. This paper will be structured into five sections; the next

section will deal with the review of literature, followed by the methodology section. The fourth section will be the discussion and interpretation of result section and the last section will be concluding section of the paper.

2.0 EMPIRICAL LITERATURE

Haron, (2004) using panel data regression analysis with inclusion of dummy variables in the study determinants of Islamic bank profitability found that liquidity had a significant positive relationship with total income received and profit, which is contrary to the findings of Guru, Stanton and Shanmugan (1999) in the study determinants of commercial banks profitability in Malaysia where they found that liquidity has a negative relationship with profit though not very significant. Haron (2004) also found no significant relationship between liquidity and profitability measures which were deflated against total capital and reserves. They also found a positive relationship between capital structure and profitability measures which were deflated against total asset. Capital structure has no significant relationship with total income which implies that additional capital cannot generate more income for banks. Guru *et.al* found expense management to be a main contributor to profitability performance in Malaysian banks. Also capital adequacy, inflation, loan component and investment in securities were found to have positive and significant impact on profitability. On the contrary, there was found to be a negative but statistically significant correlation between capital ratio, loan, discount rate, investment securities, share deposit, size of the banks of banks and profitability. While, deposits, interest expense, bank risk and bank reputation maintains a positive and significant relationship with profitability of US banking industry during the period 1995-2007 (Hoffmann, 2011). Bashir, (2003) in the study determinants of profitability in Islamic banks; evidence from Middle East, through panel regression analysis for fourteen Islamic banks between the year 1993 to 1998 found that capital adequacy, risk indicators, GDP, inflation and loan has strong, positive and robust link with profitability, but the relationship of capital adequacy, loan total asset with profitability is statistically insignificant. Contrarily, in Tunasian banks via balanced panel regression, capital adequacy, overhead to asset ratio, loan to asset post a significant and positive influence on profitability and GDP, inflation, size and non interest bearing asset ratio are insignificant in determining the profitability of Tunasian banks, though size has the most negative relationship with bank's profitability (Naceur, 2003).

In conjunction with the findings of Naceur (2003), Kusa and Ongore (2013) in the study, determinants of financial performance of commercial banks in Kenya using panel data multiple linear regression analysis found that capital adequacy and management efficiency has significant and positive relationship with return on asset (ROA), return on equity (ROE) and Net interest margin (NIM), which are all profitability measures. Inflation and asset quality also post a negative influence on profitability. While, GDP, liquidity management has positive but insignificant relationship with profitability measures except for GDP who had a positive but also insignificant influence on Net Interest Margin (NIM).

Andrea (2012) in the study determinants of bank profitability in USA covering the period 2007-2011 found that cost to income ratio, funding cost, loan loss provision and leverage had a negative but significant influence on bank's return on asset (ROA), while interest income share had positive and significant influence on financial performance of banks in USA. Also, Awo and Akoteye (2011) found in the study financial performance of rural banks in Ghana, specifically a case study of NAARA Rural bank that liquidity, size and loan has a positive and significant relationship with profitability at 95% confidence level. (see also Haron, 2004). While, non-performing loan is significant but negatively related to financial performance. Similarly, in the study bank specific and macroeconomic determinants of Turkey commercial bank profitability by Alper and Anbar (2011), bank size was found to be positively and significantly related to ROA and ROE, while loan to asset ratio has a negative but significant impact on profitability. Macro economic variables are not found to have a significant impact on ROA and no relationship at all with ROE.

Ana, Blanka and Roberto (2011) in their study determinant of bank profitability in Croatia using Dynamic panel regression found that lagged ROA, growth of loan, equity to total asset, liquidity ratio, received deposit ratio and bank's concentration indication has a positive and significant relationship with ROA. Only loan to deposit ratio post a negative but also significant relationship with ROA. Contrary to the findings of Alper et al, inflation and GDP showed a positive but insignificant impact on ROA and ROE and capital adequacy also shows a positive and significant relationship with ROA and ROE (Ramadan, Kilani and Kadduni, 2011). Their findings is in conjunction with Darydenko (2010) ; Vong and Chan (2008); Francis(2007) and Javaid, Anwar, Zanan, Gafor (2009). They used panel data regression analysis and found that capital adequacy is positively and significantly related to banks profitability.

GAP IN LITERATURE

The study has been researched by many authors but very scanty in Nigeria and all those who conducted this research work looked at it from the macro view, that is, they conducted the research and the analysis focus on the common coefficient by stacking all the banks together as one. This study will add to the body of knowledge by looking at the determinants of deposit money bank profitability in Nigeria from the micro aspect. That is, focusing on the cross-sectional specific in the panel regression from 2004 to 2012 using both bank specific and macro economic variables, therefore, showing the effect of each variable on individual bank.

3.0 Methodology

3.1 Data Sources and Description

The data used for the study are secondary in nature. They are obtained from annual audited account and financial report of banks published in the Nigerian Stock Exchange fact book. A panel data of the total fifteen (15) quoted banks covering a period of nine (9) years was employed. The fifteen banks was selected because they are listed on the Nigeria Stock Exchange and they have their data readily available at the Nigeria Stock Exchange.

The dependent variable is Return on Asset which is a proxy of **profitability** and it is defined as:
Profit after tax

Total asset

The explanatory variables are; **Capital Adequacy** defined as Total equity

Total asset

Asset quality defined as Non performing loan
Total loan and advances

Deposit Structure defined as Total deposit
Total asset

Bank size defined as the natural logarithm of total asset

Loan to total asset (LOTA) defined as Total loan and advances
Total asset

Economic growth which was proxied by natural logarithm of Gross Domestic Product (GDP).

The yearly inflation rate was also one of the macro economic variables used.

3.2 Estimation Technique and Model Specification

3.2.1 Pooled Least Square (cross section specific)

Panel Data Regression technique was preferred given its superiority over pure cross section or pure time series. The selection of variables for the estimated model was guided by relevant theories and existing empirical studies on the subject. The model is specified thus:

$$ROA_{it} = \alpha + \beta_1 CA_{it} + \beta_2 AQ_{it} + \beta_3 DEPST_{it} + \beta_4 LOTA_{it} + \beta_5 BZ_{it} + \beta_6 GDP_{it} + \beta_7 INF_{it} + \epsilon_{it} \dots\dots\dots (1)$$

Where

$i = 1, 2 \dots\dots 15$

$t = 1, 2 \dots\dots 9$

CA = Capital Adequacy

AQ = Asset Quality

DEPST = Deposit Structure

LOTA = loan to total asset

BZ = Bank size

GDP = Gross Domestic Product

INF = Yearly inflation rate

ϵ = Stochastic error term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 are regression parameters, also, the slope of each variable. On a priori the slope coefficients $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, and β_6 is expected to have a positive relationship with bank's profitability, while β_7 on a priori is expected to inversely affect bank's profitability.

4.0 Results and Findings

4.1 Pooled Regression Result (At none)

The result of pooled least square estimation is presented below:

Table 4.1.1: Summary of Pooled Least Square Result

Dependent Variable : ROA?		
Variable	Number of banks on which the variable has significant impact	Percentage of total sample
CA?	2	13.3
AQ?	2	13.3
DEPST?	1	6.7
LBZ?	1	6.7
LOTA?	2	13.3
LGDP?	1	6.7

INF?	1	6.7	
Weighted Statistics			
R- squared	0.877946	Mean dependent vari	0.012767
Adjusted R-squared	0.454827	S.D dependent var	0.051903
S.E of regression	0.038323	Sum squared resid	0.044059
Log likelihood	350.2990	Akaike info criterion	-3.634059
Durbin-Watson stat	2.569120	Schwarz Criterion	-1.374401

Source: Computation Using E- Views Statistical Package, Version 7.0

Table 4.1 shows the relationship between the dependent variable (ROA) and the independent variables (CA, AQ, DEPST, LBZ, LOTA, LGDP and INF). The effect of capital adequacy (CA) was statistically significant on two out of the fifteen selected banks, Asset Quality (AQ) was statistically significant on two banks, Deposit structure (DEPST) had significant impact on only one bank, and likewise bank size (LBZ) had significant impact on one bank. Loan to Total asset (LOTA) was also significant on two banks, while economic growth (GDP) and Inflation (INFL) has significant impact on one bank each. The result showed that capital adequacy, asset quality and loan to total asset ratio have meaningful impact on profitability of deposit money banks in Nigeria. The relationship between capital adequacy (CA) and profitability was negative for eight (8) out of the fifteen chosen banks. The findings also confirmed the work of Dey (2014) in Bangladesh and Hoffmann (2011) in US. But the seven (7) that were positive was consistent with the work of Basir (2003) in Middle east, Naceur (2003), Ongore (2013) in Kenya to mention a few. Asset quality (AQ) has negative relationship with profitability in ten banks out of the total 15 selected banks and it denotes that banks should rise up to monitor their loan and advances so as to reduce the proportion of defaults in loan repayment. Also, loan to total asset (LOTA) was negative for just six (6) out of the fifteen banks chosen. The adjusted R- squared of 0.45 denotes that only 45% of the variations in banks profitability can be explained by the CA, AQ, DEPST, LBZ, LOTA, LGDP, INFL. This is considered weak and it has now prompted us to move to the Fixed Effect Model estimate.

4.2 Fixed Effect Model (FEM)

The result of the Fixed Effect Model is presented in Table 2

Table 4.2.1 *Summary of Fixed Effect Model Result*

Dependent Variable: ROA?			
Variable	Number of banks on which the variable has significant impact	Percentage of total sample	
CA?	3	20	
AQ?	2	13.3	
DEPST?	2	13.3	
LBZ?	1	6.7	
LOTA?	3	20	
LGDP?	1	6.7	
INF?	2	13.3	
Weighted Statistics			
R- squared	0.982951	Mean dependent vari	0.012767
Adjusted R-squared	0.847695	S.D dependent var	0.051903

S.E of regression	0.020256	Sum squared resid	0.006154
Log likelihood	483.1637	F- statistic	7.267349
Durbin-Watson stat	2.534168	Prob (F- statistic)	0.000049

Source: Computation Using E- Views Statistical Package, Version 7.0

This approach significantly improved the adjusted R- squared from 45% to 85% showing that about 85% of the variations in banks' profitability was explained by the selected explanatory variables. The impact of Capital Adequacy (CA) and Loan to total asset (LOTA) was statistically significant for three out of the fifteen banks which though still weak but improved compared to the pooled regression. Asset quality (AQ) was also significant for only two banks. Deposit structure (DEPST) and inflation (INFL) also increased to two out of fifteen banks. Economic growth (LGDP) and bank size (LBZ) were static and were the only variables with the least significant impact on banks profitability. The P- value of less than 5% shows that the overall model is statistically fit.

AQ, LOTA, LGDP, INFL was negatively related to profitability of GT bank and a unit change in them will bring about 0.057427, 0.035411, 56.12144, 0.418783 unit decrease in their profitability respectively. A unit change in AQ, LOTA and LGDP will cause reduction by 0.316189, 0.011903 and 12.99673 units in Zenith banks' profitability respectively. A unit increase in CA, AQ, DEPST, LBZ and INFL will bring about 0.346036, 0.962674, 0.041765, 6.219574 and 1.467316 unit decrease in Sterling bank profitability respectively. A unit change in AQ, DEPST, LOTA and LGDP will cause 0.06400, 0.063852, 0.077235, 31.85847 unit decrease in the profitability of Skye bank respectively. CA, AQ, DEPST and LGDP will bring about 0.071457, 0.203912, 0.067754 and 54.81848 reduction in profitability of First bank respectively. Only LBZ, LOTA and INFL was positive but they are all insignificant at 5% level of significance. CA, AQ, and LBZ had negative influence on Access bank to the tune of 0.246402, 0.004080 and 0.852161 respectively. A unit change in DEPST, LBZ and LOTA will decrease profitability in Diamond bank by 0.431036, 4.488320 and 0.345251 respectively. A unit change in CA, AQ, LBZ and LOTA will bring about 0.134596, 2.986604, 0.090128 decrease in FCMB profitability respectively, although none of the variables were statistically significant. AQ, LBZ, LOTA and INFL had inverse relationship with profitability in IBTC bank to the tune of 0.619519, 7.104130, 0.156524, and 0.179001 units respectively. Only DEPST, LOTA and LGDP had negative relationship with profitability in Unity bank and a unit change in these variables will bring about 1.167204, 0.381135, 13.96195 decrease in their profitability respectively, though only LGDP was insignificant and this implies that the deposit structure and the ratio of total loan to total asset in Unity bank needs urgent attention since its posing a great influence on their profitability. AQ, LOTA, LGDP and INF had negative relationship with profitability in UBA and a unit change in all these variables will cause 0.306052, 0.001529, 28.12758 and 0.072768 decreases in their profitability respectively. Only the external factors (GDP and INFL) had negative impact with profitability in Fidelity bank though, both were not significant, but a change in these two factors will bring about 51.00009 and 0.322298 decrease in profitability respectively. LOTA, LGDP and INFL was inversely related to profitability. A unit change in these variables will lead to 0.008899, 648.1630 and 1.572391 decrease in WEMA bank profitability respectively. A unit increase in CA, DEPST, LBZ, LOTA and INFL will bring about 0.479018, 0.0079215, 0.586399, 0.770068, 0.626984 unit decrease in Union bank's profitability respectively, whereas, only CA and LOTA were significant at 5% level of significance, while unit increase in CA, AQ, DEPST and LBZ will bring about 0.080561, 0.111241, 0.004164, and 2.100821 unit decrease in Ecobank respectively but none was significant. The observed improvement informs the use of FEM model results for the further discussion and recommendation

4.3 Implication of Findings

The broad objective of the study is to evaluate the major internal and external determinants of deposit money banks by critically examining these factors on each banks so as to know which of

them actually have strong effect on bank operational efficiency. Our findings revealed that Asset quality and Loan to total asset ratio have negative influence on almost all the banks' profitability with most of them significant at 95% level of confidence. This asset quality is measured by the ratio of nonperforming loan to total loan, and the other factor is also measured by the ratio of total loan to total asset of banks. This signifies that the rate at which bank customers default their loan repayment term should be given serious and instant attention. Most of the money given out as loan should measure up with the level of risk these banks can bear in case of any default and it should be strictly disbursed to relevant customers which they are sure of repayment. The findings are consistent with Awo and Akotey (2011), Ana *et. al* (2011), Ramadan *et. al* (2011), Darydenko (2010), Vong and Chan (2007). This is a strong indication that banks need to work on their loan disbursement.

All the variables considered under this study were significant for WEMA bank at 5% level of significance but with only LOTA and macro economic variables posing negative influence. LOTA was not significant, but Wema bank should reduce the rate at which they give out loan and since the external factors are not direct result of a bank manager's decision, they should mend their activities in such a way that they will benefit from the economic situation. This was contrary to the findings of Darydenko (2010), Ramadan (2011) but consistent with Alper and Anbar (2011) who found that macro economic variables do not have a significant and positive impact on bank's Return on Asset.

5.0 Conclusion

This study evaluated the determinants of deposit money banks' profitability in Nigeria. The regression results for the models revealed that there exists either positive or inverse relationship between Return on Asset and banks specific and macro economic variables. The following recommendations are made based on the empirical findings: While Nigerian banking industry is undergoing technological innovations with different means of electronic banking and recent embracement of cashless policy, Nigerian deposit money banks must as a matter of urgency reshape their loan and advances structure. The failure of banks management and credit officers to abide by the banks' credit guidelines in the consideration of loan proposals results in rising incidence of bad and non performing loans, generating adverse effect on banks' profitability. This also explains the negativity of loan to total asset coefficients as poor loans implies imprudent use of banks' asset. Employment of sound management team and credit officers with regular examination of banks asset book by the supervisory bodies is one of the ways out of this danger. Also, the Know-Your- Customer strategy of banks should be strictly addicted to. Adequate and existing collaterals should be a prerequisite for getting loans from banks. High value of intercept implies that there are other variables outside the model that affect profitability. Proper and adequate attention should be given to other variables and indices that can affect banks' profitability aside the ones encompassed in the model especially researchers should focus on the industry - specific variables.

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