INTEREST RATE SPREAD AND DEPOSIT MONEY BANKS' PERFORMANCE IN NIGERIA: A COMPARATIVE ANALYSIS OF PERFORMANCE INDICATORS

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ABSTRACT

The study investigated interest rate spread (IRS) and performance of deposit money banks' (DMBs) in Nigeria for the period 2007 to 2020. Specifically, the effect of IRS on three performance indicators of DMBs namely return on assets (ROA), return on equity (ROE) and profit after tax (PAT) were compared. Panel data (fixed effect) regression technique was employed as the test statistic. Findings showed that IRS had significant effect on ROE and PAT of the DMBs while it had no significant effect on ROA of DMBs in Nigeria. The study recommended, among others, that Central Bank of Nigeria (CBN) should fashion out ways of narrowing IRS in Nigeria, by either by decreasing lending rate or increasing deposit rate, thus, increase performance of DMBs in Nigeria.

Keywords: Interest rate spread, return on assets, return on equity, profit after tax, performance

INTRODUCTION

Interest rate dynamics have been a topical since the global financial crisis of 2007, and has attracted increased attention from researchers and bankers in recent times. This is because of the influence of interest rate fundamentals on not only the economy, but also on performance of firms. Interestingly, interest rate spread (IRS) is among interest rate fundamentals that determine nation's economic growth and firms' financial performance. Theoretically, it is expected that a high IRS (widening gap between lending rate and low deposit rate) limits savings and borrowing, undermines investments, distorts economic growth and adversely affects firms' performance. Despite these assumption, studies report both positive and negative relationship between IRS and financial performance of firms. To some scholars, IRS undermine banks' performance (Obidike et al., 2015); while others, IRS positively influence banks' performance (Musah et al., 2018).

In Nigeria, the gap between lending rate and deposit rate has remained staggering as it continued to exist within a double digit threshold. The lending rate in 2007 was 16.94 per cent while the deposit rate was a miserly 3.55 per cent thereby leaving an IRS of 13.39 per cent. In 2008, the lending rate was 15.14 per cent while the deposit rate was a mere 2.84 per cent thereby leaving an IRS of 12.30 per cent (CBN, 2019). This double digit outlay of IRS in Nigeria continued in the years that followed such that as of 2019, it stood at 11.28 per cent with the lending rate being 15.21 per cent and deposit rate being 3.93 per cent (CBN, 2019). By 2020, IRS in Nigeria had declined to 9.10 per cent with the lending rate being 12.32 per cent and deposit rate being 3.22 per cent (CBN, 2020).

Surprisingly, even as IRS has continued to remain mostly double digit, which should hurt the banking sector, many deposit money banks (DMBs) in Nigeria have continued to exhibit impressive performance. As at the first quarter of 2022, First Bank Plc recorded a PAT of ₦41.49 billion, which exceeded its PAT of ₦38.15 billion in the first quarter of 2021 (FBN Annual Reports, 2022). This represents 8.75 percentage increments in PAT.

Similarly, United Bank for Africa (UBA) Plc recorded net interest income of ₦84.86 billion in first quarter of 2022 compared to its net interest income of ₦74.39 billion in first quarter of 2021 (UBA Annual Reports, 2022). In the same vein, Guaranty Trust Bank (GTB) achieved net interest income of ₦57.2 billion and a net interest income of ₦52.43 billion within the first quarter of 2022 and 2021, respectively (GTB Annual Reports, 2022).

The effect of IRS on performance of DMBs has been a subject of intense debate. While some scholars argue that IRS does not significantly affect banks' performance, others found that IRS significantly affected banks' performance. For instance, Eke et al. (2014) found that IRS does not have significant effect on DMBs' performance while Obidke et al. (2015), Owusu-Antwi et al. (2017) and Musah et al. (2018) argued that IRS had significant effect on DMBs' performance.

With these conflicting outcomes, one wonders whether IRS significantly affect performance of DMBs in Nigeria or not. To fill this gap, this study examined the effect of IRS on performance of DMBs in Nigeria in single-equation models adopting ROA, ROE and PAT as measures of performance. Thereafter, a comparison was made as it pertains to the effect of IRS on each of the three measures of performance adopted in the study.

Previous studies that examined IRS and performance of banks, and whose results provide vista for this study includes the study of Musah et al. (2018) which investigated the impact of IRS on profitability of Ghanaian banks from 2003 to 2016. The study showed that IRS, net interest margin, size and capital adequacy ratio had positive significant impact on ROA and ROE.

In the study of Nabende (2018) which investigated determinants of IRS in Uganda's commercial banking sector from 2005 to 2015. The study used dynamic panel data analysis and Generalized Methods of Moment to analyze data; and found that credit risk, liquidity risk, operating costs, non-interest income, capital adequacy ratio, foreign bank participation, and inflation rate are positive and significant determinants of IRS in Ugandan commercial banks. The study also showed that bank size, real GDP per capita, exchange rate and M2/GDP ratio are negative and significant determinants of IRS in Ugandan commercial banks.

Also, Owusu-Antwi et al. (2017) explored IRS and bank profitability in Ghana from 1992 to 2015. Findings of the study showed that ROA had positive significant effect on IRS while net interest income and operating cost had negative significant effect on IRS. The study further showed that total assets had positive and insignificant effect on IRS retwhile inflation rate had negative and significant effect on IRS. Finally, the study showed that GDP growth rate had negative and insignificant effect on IRS in Ghana.

Similarly, Obidike et al. (2015) probed impact of IRS on performance of Nigerian banks from 1986 to 2012. Findings showed that IRS had a weak, negative but statistically significant impact on performance of banks in the short run. In the long run, the study revealed that IRS had negative

and significant impact on performance of Nigerian banks, while exchange rate and GDP had positive significant impact on performance of banks in Nigeria.

Relatedly, Aregu (2014) analyzed determinants of banks IRS in Ethiopia from 2004 to 2013. The study used IRS as a dependent variable while credit risk, liquidity risk, operating cost, concentration, reserve requirements, gross domestic product, interest rate volatility, exchange rate volatility, ROA, non-interest income, financial development indicator, management quality and inflation rate served as independent variables. The study found that credit risk, liquidity risk, operating cost, concentration, reserve requirements, gross domestic product, interest rate volatility and exchange rate were positive and significant determinants of IRS in Ethiopian commercial banks.

In addition, Churchill et al. (2014) x-rayed determinants of IRS in Ghana from 2004 to 2012. The study adopted lending interest rate as the proxy for IRS, while GDP, inflation rate, exchange rate, Bank of Ghana prime rate and Treasury bill rate served as independent variables. Findings showed that GDP and Treasury bill rate are negative determinants of lending interest rate while inflation rate, exchange rate and Bank of Ghana prime rate positively determine lending interest rate in Ghana.

Furthermore, Eke et al. (2014) did a cointegration analysis of IRS and corporate bond market development in selected African economies from 2004 to 2014. Fully Modified Ordinary Least Squares (FMOLS) technique was used to analyze data. Findings showed that IRS had negative insignificant effect on corporate bond issue in the short run. The study also showed that sovereign bond issue and institutional governance had positive and insignificant effect on corporate bond issue in the selected African countries.

In other studies, Nampewo (2013) analyzed drivers of IRS in Uganda's banking sector from1995 to 2010; and found that Treasury bills rate, non-performing loans/total private credit ratio, exchange rate and bank rate are positive and significant determinants of IRS in Ugandan commercial banks. The study further showed that M2/GDP ratio was a negative and significant determinant of IRS in Ugandan commercial banks.

Akinlo and Owoyemi (2012) on their part investigated determinants of IRS in Nigeria from 1986 to 2007. The pooled-effect result showed that cash reserve requirements and average loans to average total assets ratio had positive and significant effect on IRS; that capital employed to average total assets ratio, changes in inflation and treasury certificates had negative and significant effect on IRS; that remuneration to total assets ratio and GDP had positive significant effect on IRS; and that development stock and treasury bonds had negative and insignificant effect on IRS.

In view of the above, we hypothesize that:
Ho_1: IRS does not have significant effect on ROA of DMBs in Nigeria.
Ho_2: IRS does not have significant effect on ROE of DMBs in Nigeria.
Ho_3: IRS does not have significant effect on PAT of DMBs in Nigeria.

THEORETICAL FRAMEWORK OF THE STUDY

This study is premised on loanable funds theory (Wicksell, 1936) which emphasize the role of demand and supply of loanable funds in determining interest rate. Most importantly, the theory

appreciates the role of banks in creating credit. The thinking is that the banking sector can create credit because it has the ability to temporarily diminish market interest rate below natural rates, thereby narrowing IRS, increasing investment and enhancing performance of banks. On the other hand, it was argued that banks can also destroy credit and if this happens, market interest rate goes above natural rates, and with it comes high IRS, decreased investment and decreased performance of banks.

METHODOLOGY

This study examined the effect of IRS on performance of DMBs in Nigeria. The study adopted an ex-post facto research design, and relied on secondary sources of data collected from bulletins of the Nigerian Exchange Group, the Security Exchange Commission (SEC) bulletin and CBN Statistical bulletin for the period 2007 to 2020. The study utilized these sources of secondary data because they provide reliable information on performance of DMBs in Nigeria. Multiple regression analysis was used to determine the effect IRS on proxies of performance of DMBs.

Model Specification
The single-equation models for the study were specified as:
ROA = f (IRS) ……………. (1)
ROE = f (IRS) …………..... (2)
PAT = f (IRS) …………..... (3)
Specifying the models (1) to (3) into their econometric forms, we have:
$ROA_{it} = \beta_{0i} + \beta_1 IRS_{it} + \pounds_{it}$ …………… (4)
$ROE_{it} = \alpha_{0i} + \alpha_1 IRS_{it} + \mu_{it}$ …………… (5)
$LNPAT_{it} = \pi_{0i} + \pi_1 IRS_{it} + \text{€}_{it}$ ………… (6)
Where:
ROA = Return on assets
ROE = Return on equity
PAT = Profit after tax
β_0, α_0 and π_0 = Constant terms
β_1, α_1 and π_1 = Coefficients of explanatory variables
£, μ and € = Cross-sectional error terms
i = Entity (Banks) (i = 5 Deposit Money Banks)
t = Time (t = 14 years; 2007 – 2020)

RESULTS

Table 1: Panel Data (Fixed effect) Result for ROA Model

Variable	Coefficient	Std. Error	t-statistic	Prob. Value
C	3.178950	0.781473	4.067893	0.0001
IRS	-0.088342	0.057723	-1.530440	0.4309
R^2 = 0.696118				
Prob. (F-statistic) = 0.000000				

Dependent Variable: ROA
Source: Author's computation from E-views software package (2023).

From the panel (fixed effect) regression result in Table 1, there was evidence of negative effect of rate spread on ROA of DMBs in Nigeria. From the result, 1% increase in IRS led to 0.09% decrease

in ROA. The probability value of IRS (0.4309) was greater than the significant level (0.05). Thus, the study inferred that IRS had insignificant effect on ROA of DMBs in Nigeria.

The coefficient of determination of 0.696118 suggested that 70% of variations in ROA of DMBs in Nigeria result from change in IRS, while 30% variation in ROA came from factors not included in the model. The probability F-statistic (0.000000) was less than the significant level (0.05), this indicates that the model was reliable and significant in policymaking for DMBs in Nigeria.

Table 2: Panel Data (Fixed effect) Result for ROE Model

Variable	Coefficient	Std. Error	t-statistic	Prob. Value
C	28.08950	4.563909	6.14703	0.0000
IRS	-1.037986	0.338425	-3.067108	0.0035
$R^2 = 0.700436$				
Prob. (F-statistic) = 0.000000				

Dependent Variable: ROE
Source: Author's computation from E-views software package (2023).

In Table 2 there was evidence of negative effect of IRS on ROE of DMBs in Nigeria. From the result, 1% increase in IRS led to 1.04% decrease in ROE of DMBs. The probability value of IRS (0.0035) was less than the significant level (0.05). Thus, the study holds that interest rate had significant effect on ROE of DMBs in Nigeria.

The coefficient of determination of 0.700436 suggests that 70% variations in ROE of DMBs in Nigeria results from change in IRS; while the remaining 30% variation in ROE were from other factors not included in the model. The probability F-statistic (0.000000) was less than the significant level (0.05). This indicates that the model was reliable and significant for policymaking in DMBs in Nigeria.

Table 3: Panel Data (Fixed effect) Result for PAT Model

Variable	Coefficient	Std. Error	t-statistic	Prob. Value
C	16.64317	0.805061	20.67318	0.0000
IRS	-0.274339	0.059667	-4.597866	0.0000
R2 = 0.961691				
Prob. (F-statistic) = 0.000000				

Dependent Variable: LN(PAT)
Source: Author's computation from E-views software package (2023).

From the panel (fixed effect) regression result in Table 3, there was evidence of negative effect of IRS on PAT of DMBs in Nigeria. From the result, 1% increase in IRS led to 0.27% decrease in PAT of DMBs. The probability value of IRS (0.0000) was less than the significant level (0.05). Thus, the researchers concluded that IRS had significant effect on PAT of DMBs in Nigeria.

The coefficient of determination of 0.961691 suggested that 96% of variations in PAT of DMBs in Nigeria results from change in IRS. The remaining 4% variations in PAT came from other factors not included in the model. The probability F-statistic (0.000000) was less than the test significant level (0.05) and this indicated that the model was reliable and significant for policymaking in DMBs in Nigeria.

CONCLUSION AND RECOMMENDATIONS

Comparatively, the study showed that IRS had negative effect on ROA, ROE and PAT of DMBs in Nigeria. This outcome contrasts with the report that a positive link exists between interest rate and performance (proxied by ROA and ROE) of commercial banks in Nigeria (Musah et al., 2018). The negative relationship between IRS and the measures of performance as shown in this work might be attributed to multiplier effect of Nigeria's double-digit IRS which had rendered bank borrowing unattractive, thus, undermining banks' performance measures including ROA, ROE and PAT. On the other hand, the study showed that IRS significantly affected ROE and PAT of DMBs, but does not significantly affect ROA of DMBs in Nigeria.

The debate on the effect of IRS on performance of deposit money banks rages on. As a contribution to the body of knowledge, this study investigated the effect of IRS on banks' performance in single-equation models where IRS was the predictor variable while banks' performance, proxied by ROA, ROE and PAT was the dependent variable. Based on the results of the statistical analyses conducted, and their consistency with reports of prior studies, the study conclude that IRS affects performance of DMBs in Nigeria, in terms of ROA, ROE and PAT.

The study therefore recommends that the CBN should fashion out ways of narrowing IRS in Nigeria, by either by decreasing lending rates or increasing deposit rates, thereby increase performance of DMBs. The study also recommends that the CBN should lower the monetary policy rate (MPR) in order to drive down lending rate to a single digit. Double digit lending rate diminishes borrowing and retards investment, hence, decreases performance DMBs in Nigeria.

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