

Effect of earnings generation and retention capacity on the financial performance of Deposit Money Banks in Nigeria

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ABSTRACT: This study evaluates the generation and retention capacities of financial earnings of Deposit Money Banks (DMBs) in Nigeria. There has been a widening gap between earnings generated and portion of the earnings retained thereof vis-a-vis the annual financial profits disclosures by DMBs, hence this study examines whether Earnings Generation Capacities (EGC) and Earnings Retention Capacities (ERC) of DMBs optimize their annual financial profit disclosures. This study adopts the ex post facto research design using secondary data from annual reports of seven DMBs from 2015 to 2020. Panel Regression Technique aided by E-View 9.0 statistical software was used for analyses. The results show that EGC and ERC have significant positive and negative effects respectively on the profitability of DMBs in Nigeria. This implies that assets of the DMBs are underutilized and cost management strategies under-optimized thereby undermining the achievement of optimal earnings generation and retention capabilities. The study recommends that DMBs need to improve on their asset utilization strategies and also adopt efficient in-house cost curtailment initiatives on Procurement and Equipment Asset Maintenance Costs (PEAMC) to enable DMBs to boost profitability, and strengthen going concern to meet shareholders' return expectations.

Keywords: Asset utilisation, cost management strategies, earnings generation, earnings retention, profitability.

JEL classification: G21, M41.

INTRODUCTION

Earnings disclosed in the annual reports of banks/firms provide an overview of the effectiveness with which the management employs the assets of financial institutions into productive use and also the banks' efficiency in managing the business operating costs for optimal financial performance. Although some assets may maintain non-productive status due to their inability to directly generate income, such assets are considered necessary support to the operations of the commercial banks. Aligning with this thought, Ugoani (2016) believes that banks need to uphold cost-efficiency in running the assets of their organisations because consistent and high-income disclosures by banks unarguably build high public confidence and possibly lead to improved profitability in the future. Indeed, banks that earn more income are most likely exposed to a more realistic tendency to maintain a dividend policy that satisfies the Shareholders (Iheduru

and Okoro, 2018).

The financial performance of Deposit Money Banks can be measured and perceived differently by assessors from various income-related disclosure sources depending on the standpoint and intension of the assessor. While the government can measure the financial performance of DMBs from the 'tax generated from the banks' overtime perspective', Financial Analysts and Investors lay more emphasis on income retained from operations (Profit Before Tax) of DMBs. Society however concentrates on the quantum of Business Social Responsibility (BSR) projects undertaken by banks in host communities as core measurement criteria in evaluating banks' financial performance. Rees and Shane (2012) opined that while taking into consideration an enterprise's lifecycle, its overall performance equals a net value of income and expenditure of financial means, excluding financial means

transferred and distributed by owners. This simply implies that the measure of financial performance of banks does not only depend on returns distributed to shareholders but also includes a measure of income disclosed by entities before returns were distributed to the shareholders.

At a glance, the concept of Profit Before Tax (PBT) among banks reveals the earnings generation and retention capacity of banks. There is a paucity of contemporary studies with emphasis on the earnings generation and earnings retention capacities vis-à-vis the profitability of DMBs. Income generation and income retention serve as initial safeguards for banks' survival and sustainable financial performance. Both concepts are usually viewed as the first line of defence against capital depletion for banks to remain competitively profitable. Sajnog (2017) studied the role and significance of comprehensive income in forecasting the profitability of selected banks in Poland. The study uses absolute values of accounting results and relative terms of the Return on Assets ratio which revealed that there are positive dependencies between comprehensive earnings and future gains of entities both in absolute and relative terms. A periodic analysis of banks' earnings generation and earnings retention capacities is critical in measuring the successes of banks. This financial performance evaluation can be done using the metrics of Return on Assets (ROA) and Cost-to-Income (CTI) which are common starting points in analyzing the income generation and income retention capacities of DMBs. Both ROA and CTI give a clearer picture of the trade-off between the incomes generated and the portion of the income unspent for the overall profitability. Thus, the specific objective of this study is to ascertain whether deposit money banks' Earnings Generation Capacities (EGC) and Earnings Retention Capacities (ERC) optimize the yearly profit disclosures of the banks.

LITERATURE REVIEW

Conceptual Review

Earnings

This is the aggregate of money an individual or business organization receives from customers in exchange for goods provided or services rendered. It can also be in form of a return on capital invested. McNaughton and Barltrop (1992) assert that the best evidence that a bank is viable is if it is able to sustain consistent growth of high-quality earnings which is desirable for a bank to maintain earnings growth at a pace that yields a level of dividends satisfactory to shareholders while also reinforcing its capital to asset ratio.

Earnings Generation (EG)

EG is the process of making money through selling

products or rendering services to customers/clients. Earning is the aggregate inflow of various income sources disclosed by a firm in its Statement of Comprehensive and Other Incomes.

Earnings Generation Capacity (EGC)

EGC is a comparative financial performance measurement metric used to evaluate the ability of a firm to make money through selling of its product or rendering of service within a given industry categorization over a specific period. EGC measures the ability of a firm to realize strong revenue performance vis-a-vis its peers in the industry which may result in impressive profitability ratios. A high return on assets provides useful insight that the bank is engaged in higher risk activities that would boost earnings generation. It is on the basis of this concept that the null hypothesis was developed:

H₀₁: Earnings Generation Capacities have no significant effect on the financial performance of Deposit Money Banks in Nigeria.

Earnings Retention (ER)

ER is the conservative practice of holding back a portion of earned income for the purpose of growing the business thus, boosting financial performance generally both in value and in financial ratio terms. The Profit Before Tax (PBT) gives a glance view of the portion of earned income held back unspent by a firm over a definite period.

Earnings Retention Capacity

ERC is a financial performance measurement metric used to assess the ability of a firm to hold back a sustainable portion of its earned income in a given financial period when compared with the portion held back or unspent by rival companies in similar industries. Cost-to-income (CTI) ratio gives an analytical insight into the retention capacity across firms and industries. The growing need for banks to make necessary expenditures in technology, marketing and new capabilities to remain competitive has made it imperative for banks to operate efficiently. According to Reimink (2019), improved efficiency means processes that are scalable and that support a faster pace of growth for the banks' revenue stream and asset base than for its overhead costs. Based on the foregoing, the below hypothesis was also developed:

H₀₂: Earnings retention capacities have no significant effect on the financial performance of Deposit Money Banks in Nigeria.

Profitability

Profitability is a financial performance measurement

indicator that shows the excess of income inflows over expense outflows on all aggregate sources for a firm. It simply means the difference between the aggregate income and aggregate expenses of a firm. Profitability as used in this study is Profit Before Taxation (PBT). Generally, income generation capacity and income retention capacity of a firm are two contemporary essential drivers which give competitive edge amongst firms on profitability. These two drivers largely depend on the variability of conservative management practices of one firm to another.

Return on Asset (ROA)

Assets of a firm either human, material, moveable or immovable are acquired to support the firm to generate earnings. According to Investopedia (2022), ROA is a financial performance indicator that measures how effective a company has utilized its total assets to generate income values that boost overall earnings and profitability. ROA is calculated by dividing a company's Net Income (PBT) by Total Assets. That is, the percentage of net income to total assets.

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Cost-to-Income Ratio (CTI)

According to Indeed Editorial Team (2021), CTI is the ratio of expenses incurred by a firm to the income earned within a specific period. It is a quick measure that reveals whether or not a firm would be profitable or not. This is expressed as:

$$\text{Cost – to Income} = \frac{\text{Total Operating Expense}}{\text{Total Operating Income}}$$

Theoretical Framework

Maximisation of growth is the overall objective of every business, though growth maximization varies in perception between the owners (shareholders) and managers of firms. According to Marris' Growth Maximization Theory (1964), the owners want profits and market share, whereas the managers desire better salaries, job security, and growth. Maximising profits and market share becomes possible for the owners when the managers adopt prudent practices on earnings and revenue retention which may be very difficult for the managers. Specifically, this dichotomy between the managers and the owners of the firm is made more visible when earnings and revenue retained unspent from operations; cost-to-income and return on asset ratios achieved by the managers are in higher proportion for the growth of the firm. It is on this revelation that Marris (1964)

theorised that the owners (shareholders) have different goals from those of the managers. Therefore, this study is driven by Marris' Growth Maximization Theory. The Marris' Growth Maximization theory presents a clearer picture of why some firms have higher income generation capacity, record high earnings more than other firms in the same industry, but fail to achieve optimal growth in Profit Before Tax (PBT) disclosures yearly. However, Debnath (2017) maintained that earnings figures are presented and disclosed under close monitoring of the executives who exercise their discretionary powers. The dichotomy in the perception of growth maximisation for firms reflects in their level of income generation and retention capacities for overall financial performance.

Ronen and Yaari (2008) opined that income management is the manipulation of accounting data in order to influence shareholders and other stakeholders in their decision-making aimed to enhance the management of personal profit. There are four tools involved in income management: discretionary accruals and liabilities estimation, recognition of revenues, generous reserve accounting and excessive provisions. These tools can greatly influence figures disclosed by firms (banks inclusive) on income generation, income retention and profitability (PBT).

Review of Empirical Studies

Ugoani (2016) investigated the earnings and profitability of banks in Nigeria. The study generated questionnaire responses from 300 participants who were ranked on a 5-Point Likert-type scale, in addition to the data on gross earnings, profitability and capital adequacy ratio indicators for five banks which were analyzed using Chi-Square statistics. The result of the study revealed that gross earnings (interest income, commission, charges and other fees) form the bases of banks' profitability. This evidence supports the findings of McNaughton and Bartrop (1992) that earnings are critical for banks' profitability. This implies that earnings generation and earnings retention are necessary for banks to disclose cutting-edge financial performance that would meet the growth expectations of the shareholders and the managers. Income generation, income retention and profit disclosures are bottom line or ultimate performance measures which show the net effects of banks' policies and activities in a financial year. The stability and growth of income and profit trends are the best summary indicators of banks' financial performance both for the past and the future.

Inyama and Ugwuanyi (2016) examined the relationship between bank age and retained earnings using Zenith Bank Nigeria PLC. The study was ex post facto research design based, which used the bank's data on revenue reserve and the age of the bank to run regression analysis for 12 years (2002-2013). The analysis indicates that bank/firm age has a positive and significant effect on

retained earnings and the level of association between the variables revealed that bank age share a positive relationship with retained earnings with revenue reserves of Zenith Bank Plc increasing steadily over the study period. The study concluded that banks must source the bulk of their investible fund through reserves which is almost cost free, rather than through external loans and equity which has cost implication in terms of interest content, which is unbearably high. This study examined firm's growth from the standpoint of reserves.

Alhadab and Al-Own (2017) examined whether earnings management affects banks' current and future performance in Europe. It analysed the relationship between discretionary loan loss provision on both return on assets (ROA) and return on equity (ROE) on a sample of 477 bank-year observations that represent 55 European banks over the period of fifteen years (2001- 2015) using correlation analysis. The result provided empirical evidence that European banks with high levels of earnings management as a result of discretionary loan loss provision experience inferior performance (measured via ROA and ROE) in the current and subsequent years. The results show that the negative impact of earnings management which occurs in a specific year extends into the following year and also earning practices of management have important effect on firms' profitability and performance.

Tabassum *et al.* (2015) used a sample of 119 firms from 2004 to 2011 to investigate the relationship between earning management and firms' future performance. The result of the analysis shows that firms that used earnings management activities through sales manipulation to increase reported earnings have worse financial performance in future.

Okezie (2017) conducted a study to evaluate the effect of income management on the profitability of quoted banks in Nigeria. Income management was measured by discretionary accruals (DACC) while bank profitability was measured by return on assets (ROA) and return on capital employed (ROCE) with a view to determining the level at which discretionary accruals affect ROA and ROCE. The study used secondary data from reported financial statements of quoted banks; employed regression analysis in testing the hypothesized variables. The study revealed a positive but very insignificant relationship between discretionary accruals and return on assets; and a positive and very strong relationship with returns on capital employed. The study also found no evidence in support of the return on assets performance hypothesis, therefore the discretionary accruals had no effect on return on assets as a measure of banks' profitability in Nigeria.

Olarewaju (2016) evaluated the influence of the capital base of banks on the level of operational efficiency of banks in Nigeria for the period 2004-2013. The aims of the study were: to examine the effectiveness of financial ratio analysis in measuring banks' operational efficiency; whether banks' policy on capital adequacy can

significantly spur the banks to the level of operational efficiency. Measures of central tendency and two-way fixed-effect regression techniques were used to analyze secondary data extracted from annual reports and accounts of the fifteen purposively selected quoted banks. Findings from the analysis showed that debt to total equity ($t = -3.17, p < 0.05$), core capital ratio ($t = 4.65, p < 0.05$), bank risk ($t = -3.89, p < 0.05$) were significant in evaluating the influence of capital adequacy on the operational efficiency of the Nigerian money deposit banks.

Mundi (2019) examined the impact of income streams such as fund income and fee income on a bank's performance. Data were collected from the CMIE Prowess database on 74 banks of public, private, and foreign banks in India covering a period of 10 years (2005 - 2014). The study identified fund income and fee income as the two income streams for the bank. Bank's performance was measured by return on equity (ROE) using return on assets (ROA) as control variable. Multiple regressions were used in the study to analyse the relationship between fund and fee incomes. The result revealed that fee income and fund income are moderately positively correlated with return on equity (ROE). The study concluded that in today's era of competition, the income streams of the bank are changing for banks' performance.

According to a study conducted by Startcredits.com (2020) on the top banks in Nigeria by gross earnings and profit before tax in 2019. The study rated Zenith Bank with N662 billion gross earnings first, followed by First Bank N627 billion, Access Bank N566 billion, UBA N559 billion, GT Bank N435 billion, Stanbic IBTC N233 billion, Fidelity N215 billion, Union Bank N166 billion and Wema Bank N50 billion. Also, Zenith Bank with N243 billion in profit before tax (PBT) was rated first, followed by GT Bank N231 billion, Access N115 billion, UBA N106 billion, Stanbic IBTC N90 billion, First Bank N65 billion, Fidelity N30 billion, Union Bank N18 billion and Wema Bank N6 billion. The gross earnings and profit before tax further revealed the banks' earnings retention ratios (ERR) in 2019 as: Zenith Bank 36.7%, GT Bank 53.1%, Access Bank 20.3%, UBA 18.9%, Stanbic IBTC 38.6%, FirstBank 10.8%, Fidelity 13.9%, Union Bank 10.8% and Wema Bank 12% respectively. GT Bank with 53.1% was rated highest in ERR, seconded by Stanbic IBTC 38.6% and thirdly by Zenith Bank 36.7% in 2019 financial year.

Giacomo and Alessandro (2019) investigated earnings management practices in the banking industry via loan loss provisions and the peculiarity of regulatory and supervisory environment in the banking industry on the basis of a set of indexes included in the bank regulation and supervision survey. A sample of 156 banks from 19 European countries under the Single Supervisory Mechanism (SSM) over the period 2006-2016 was used. Regression analysis was employed to test banks' income smoothing, capital management, and signalling practices. The study explored the relationship between accounting quality, income smoothing and earnings management with

the objectives of ascertaining which one of the trio is the most important determinant of net profit for the banks. The study analysis revealed loan loss provisions as a strong tool for smoothing the amount of net profit during financial crisis and it is also used in conveying private information to the market. The results demonstrate that controls such as on-site inspection can influence the behaviour of bank managers in terms of income smoothing and signalling practices and the controls can be effective instruments in reducing banks' management accounting discretion thereby making financial statements more reliable.

Several studies reviewed raised controversies on the basic determinant of banks' profitability. According to Giacomo and Alessandro (2019), Inyama and Ugwuanyi (2016), Alhadab and Al-Own (2017), Tabassum *et al.* (2015) and Ugoani (2016), banks' profitability is determined by regulatory supervisory controls, banks' age, earnings management practices and gross earnings of the banks. Also, studies such as Gizycki (2001), Olarewaju (2016), Umakrishnan and Bandyopadhyay (2005) opined that quality of assets, bank size, nature of ownership, interest spread capital adequacy and growth parameters are the internal variables that affect banks' financial performance. However, no known study to the best knowledge of the researchers has carried out a comparative comprehensive study to evaluate DMBs' yearly earnings generation capacities (ROA) and income retention capacities (CTI ratio) of banks as tools for measuring the DMBs' financial performance (PBT). It is this research gap that motivated this study to provide empirical evidence that earnings generation capacity and income retention capacity are two critical indices that determine the profitability of deposit money banks in Nigeria.

METHODOLOGY

This study adopts the ex post facto research design. The population of the study comprises twelve (12) Deposit Money Banks listed on the Nigerian Stock Exchange (NSE) as of December 31, 2020. However, only seven (7) of these DMBs recognised and categorised by the Central Bank of Nigeria (CBN) as Domestic Systemically Important Banks (DSIBs) in its 2020 ranking served as the sample size for this study. The combined assets of these DSIBs constitute 70% of the banking industry asset as of December 31, 2019. Secondary data were mainly sourced from the annual reports and audited accounts of the seven (7) domestic systemically important banks in Nigeria for the period 2015-2020 (six years). Data extracts were analysed using Panel Least Square (PLS) regression with the aid of E-View 9.0 statistical software. The variables of this study consist of Earnings Generation Capacities (EGC), Earnings Retention Capacities (ERC) and Profitability (PBT). A model was developed to establish the relationship between Earnings Generation Capacities (EGC), Earnings Retention Capacities (ERC) and

Profitability (PBT) as shown below:

$$\text{Financial Performance} = f(\text{EGC}, \text{ERC}) \dots \dots \dots (1)$$

The static linear model is presented in the second equations

$$\text{PBT}_{it} = \beta_0 + \beta_1 \text{ROA}_{it} + \beta_2 \text{CTI}_{it} + \epsilon_{it} \dots \dots \dots (2)$$

Model (2) above is further decomposed into models (3) and (4) below to capture the effect of each of the independent.

$$\text{PBT}_{it} = \beta_0 + \beta_1 \text{ROA}_{it} + \epsilon_{it} \dots \dots \dots (3)$$

$$\text{PBT}_{it} = \beta_0 + \beta_2 \text{CTI}_{it} + \epsilon_{it} \dots \dots \dots (4)$$

Where: β_0 = Intercept of the regression; $\beta_1, \beta_2, \beta_3$ = Coefficients of Earnings Capacities Indices; μ_{it} = error term capturing other explanatory variables not explicitly included in the model of bank i in period t ; Y = dependent variable (Financial Performance); X = independent/explanatory variable (Income Retention Capacities); EGC_{sit} = Return on Assets of bank i in period t (independent variable); PBT_{it} = Profit Before Tax of bank i in period t (dependent variable); ERC_{sit} = Cost -To-Income of bank i in period t (independent variable); i = individual bank (1, 27); and t = time period (1, 25).

ANALYSES AND RESULTS

Descriptive analysis

The descriptive analysis was carried out using measures of central tendency, measures of variability, and measures of normality. The result of the descriptive analysis is presented in Table 1. Table 1 shows that CTI has a mean value of 58.77 which indicates that the sample of listed banks' earnings retention capacities measured by the cost to income (CTI) ratio achieved 58.77%. By implication, in operating the banks, the sampled deposit money banks spent 58.77% on average to generate their operating income from 2015 to 2020. The CTI value deviates from the average by 19.16, approximately. The minimum and maximum values of CTI are 24.50 and 89.50, respectively from the sample. This means that the firm with the highest earnings retention capacity from the sample spent 24.50% to generate its operating profit, while the bank with the least earnings retention capacity spent 89.50% to generate its operating income. The Jarque-Beraprob value together with the skewness and kurtosis suggests that the data on CTI are from a normal distribution.

Furthermore, Profit Before Tax has a mean value of 95299.50 which indicates that the sample of listed banks' financial performance measured by Profit Before Tax (PBT) was 95299.50 with a standard deviation of 70551.41. The huge standard deviation of PBT from the

Table 1. Descriptive analysis.

Parameters	CTI	PBT	ROA
Mean	58.77143	95299.50	0.037714
Median	61.85000	76739.00	0.026000
Maximum	89.50000	255801.0	0.170000
Minimum	24.50000	-39889.00	-0.090000
Std. Dev.	19.16459	70551.41	0.044206
Skewness	-0.062134	0.656029	0.868890
Kurtosis	1.671486	2.650504	5.797247
Jarque-Bera	3.115685	3.226374	18.97782
Probability	0.210590	0.199252	0.000076
Sum	2468.400	4002579.	1.584000
Sum Sq. Dev.	15058.55	2.040000	0.080121
Observations	42	42	42

Analysis output (2022) using Eviews 10.

average implied that the financial performance of the banks under study is not homogenous. This was equally adduced by the minimum and maximum values of PBT which are -39889 and 255801, respectively from the sample. This means that the most profitable bank amongst the sampled banking firms realized a profit before tax of 255801, while the least profitable bank realized a loss before tax of -39889. It was deduced from the Jarque-Beraprob value of 0.199 together with the skewness and kurtosis that there are no outliers in the PBT of the sampled banks since the prob value of Jarque-Bera is greater than 0.05.

Finally, Return on Asset has a mean value of 0.0377 which indicates that the sample of listed banks' Earnings Generation Capacities measured by ROA was 3.77% with a huge standard deviation of 4.42. The average ROA value of 3.77% shows that the sample banks generate (on average) less than 4% net profit from ₦1 investment in the banks' assets. There is a very wide dispersion in the ROA of the sampled banks according to the standard deviation of ROA in Table 1. This was clearly shown by the minimum and maximum values of ROA which are -0.09 and 0.0442, respectively. The bank with the highest earnings generation capacity from the sample realized 4.42% net profit on ₦1 investment in the banks' asset, while the bank with the least earnings generation capacity lost 9% net profit on every ₦1 investment in the banks' assets. The Jarque-Beraprob value of 0.000 together with the skewness and kurtosis confirm that there are outliers in the ROA of the sampled banks since the prob value of Jarque-Berais less than 0.05.

Testing of null hypotheses

Hypotheses I (H₀₁): Earnings generation capacities have no significant effect on financial performance of Deposit Money Banks in Nigeria

The abilities of the banks to generate earnings (Earnings

Generation Capacities) were measured using ROA of the banks, while financial performance was measured with the use of Profit Before Tax (PBT). The model deployed for the test of the null hypothesis is restated as below:

$$PBT_{it} = \beta_0 + \beta_1 ROA_{it} + \epsilon_{it}$$

The OLS regression results are shown in Table 2. R-squared (R²) which is also called the coefficient of determination is used to show the proportion of the variance for a dependent variable that is explained by an independent variable or variables in a regression model. Thus, the R² of 0.255899 indicates that about 25.59% variance in Profit Before Tax is explained by earnings generation capacities (proxy by ROA).

Adjusted R²(R⁻²) makes more precise the goodness-of-fit for linear models by identifying the percentage of variance in the target field that is explained by the relevant input or inputs. The essence of Adjusted R² is to correct the overestimation issue that R² produces as more predictors are added in a regression model. Thus, the R⁻² of 0.217740 indicates that the predictor variables, ROA and firm size, accurately determined about 21.77% variance in Profit Before Tax.

The F-statistic in Table 2 is used to show whether there is a predictive relationship between financial performance and earnings generation capacities in the population. The F-statistic = 6.706129 with a p-value of 0.003 indicates that earnings generation capacities significantly predict the financial performance of listed deposit money banks in Nigeria. This was deduced from the test of model significance since prob(F) = 0.003 is less than 0.05.

The Durbin Watson (DW) statistic in Table 2 tests for autocorrelation in the residuals from the regression analysis conducted. The Durbin-Watson statistic of 0.35 which is less than the recommended value of 2.0 indicates that autocorrelation is detected in the sample.

Return on Asset has a positive coefficient of 587072.1 which shows that an increase in ROA by 1 unit directly

Table 2. OLS regression result for hypothesis I.

Dependent Variable: PBT				
Method: Least Squares				
Date: 07/12/22 Time: 13:10				
Sample: 1 42				
Included observations: 42				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-556614.8	293832.5	-1.894327	0.0656
ROA	587072.1	222779.3	2.635219	0.0120
R-squared	0.255899	Mean dependent var		95299.50
Adjusted R-squared	0.217740	S.D. dependent var		70551.41
S.E. of regression	62399.51	Akaike info criterion		24.98925
Sum squared resid	1.520000	Schwarz criterion		25.11337
Log likelihood	-521.7743	Hannan-Quinn criter.		25.03475
F-statistic	6.706129	Durbin-Watson stat		0.351810
Prob(F-statistic)	0.003139			

Analysis output (2022) using Eviews 10.

increases the Profit Before Tax of listed deposit money banks by 587072.1. This positive effect is considered significant because the $\text{prob}(t) = 0.0120$ is less than 0.05. Therefore, the alternate hypothesis was accepted that Earnings Generation Capacities have a significant positive effect on financial performance.

Decision: The null hypothesis is therefore rejected at a 5% level of significance since $\text{Prob}(t) = 0.0120$ is less than 5% and the regression coefficient of ROA shows a positive value of -587072.1 implying that a decrease in ROA by a margin will inversely affect the profit before tax of the DMBs ($t = 2.63$, $p\text{-value} = 0.0120$).

Hypotheses 2 (H₀₂): Earnings retention capacities have no significant effect on the financial performance of Deposit Money Banks in Nigeria

Earnings Retention Capacities were measured using CTI ratio of the banks, while financial performance was measured with the use of Profit Before Tax. The model deployed for the test of the null hypothesis is restated as below.

$$\text{PBT}_{it} = \beta_0 + \beta_1 \text{CTI}_{it} + \varepsilon_{it}$$

The OLS regression results are shown below in Table 3. R-squared (R^2) which is also called the coefficient of determination is used to show the proportion of the variance for a dependent variable that is explained by an independent variable or variables in a regression model. Thus, the R^2 of 0.269918 indicates that about 26.99% variance in Profit Before Tax is explained by earnings retention capacities (proxy by CTI).

Adjusted R^2 (R^{-2}) makes more precise the goodness-of-fit for linear models by identifying the percentage of variance in the target field that is explained by the relevant input or inputs. The essence of Adjusted R^2 is to correct the overestimation issue that R^2 produces as more predictors are added in a regression model. Thus, the R^{-2} of 0.232478 indicates that the predictor variable (CTI) accurately determined about 23.25% variance in Profit Before Tax.

The F -statistic in Table 3 is used to show whether there is a predictive relationship between financial performance and earnings retention capacities in the population. The F -statistic = 7.209339 with a p -value of 0.002 indicates that earnings retention capacities significantly predicts the financial performance of listed deposit money banks in Nigeria. This was deduced from the test of model significance since $\text{prob}(F) = 0.002$ is less than 0.05.

The Durbin Watson (DW) statistic in Table 3 tests for autocorrelation in the residuals from the regression analysis conducted. The Durbin-Watson statistic of 0.52 which is less than the recommended value of 2.0 indicates that autocorrelation is detected in the sample.

Cost to Income ratio has a negative coefficient of -1484.986 which shows that an increase in CTI by 1 unit directly reduces the Profit Before Tax of listed deposit money banks by 1484.986. This negative effect is considered significant because the $\text{prob}(t) = 0.008$ is less than 0.05. Therefore, the alternate hypothesis was accepted that earnings retention capacities have a significant negative effect on financial performance.

Decision: The null hypothesis is therefore rejected at a 5% level of significance since $\text{Prob}(t) = 0.008$ is less than 5% and the regression coefficient of CTI shows a negative value of -1484.986 implying that a decrease in CTI will

Table 3. OLS regression result for hypothesis II.

Dependent Variable: PBT				
Method: Least Squares				
Date: 07/12/22 Time: 13:13				
Sample: 1 42				
Included observations: 42				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-290447.2	315861.4	-0.919540	0.3635
CTI	-1484.986	530.8059	-2.797606	0.0080
R-squared	0.269918	Mean dependent var		95299.50
Adjusted R-squared	0.232478	S.D. dependent var		70551.41
S.E. of regression	61808.91	Akaike info criterion		24.97023
Sum squared resid	1.49E+11	Schwarz criterion		25.09435
Log likelihood	-521.3749	Hannan-Quinn criter.		25.01573
F-statistic	7.209339	Durbin-Watson stat		0.517919
Prob(F-statistic)	0.002166			

Analysis output (2022) using Eviews 10.

inversely affect profit before tax of the DMBs ($t = -2.798$, p -value = 0.008).

DISCUSSION

This study evaluated the capacities of deposit money banks in generating and retaining their earnings across the Nigeria banking industry using the measures of return on assets, cost-to-income ratio and profit before tax as proxies for Earnings Generation Capacities (EGC), Earnings Retention Capacities (ERC) and Profitability respectively. The study also employed Banks' Size (BSZ) as a control variable proxied by banks' asset base as to boost the study results.

For Hypothesis 1, the regression result shows that the R-squared which is the coefficient of determination is 0.255899. This implies that 25.59% variations in profit before tax can be attributed to changes in the ROA of the banks. The overall significance of the model was validated by the F -ratio of 6.706129 with a corresponding $Prob(F) = 0.003$. Therefore, at a 5% level of significance, ROA influences profit before tax of quoted deposit money banks in Nigeria.

For Hypothesis 2, the regression result shows that the R-squared which is the coefficient of determination is 0.269918. This implies that 26.99% variations in profit before tax can be attributed to changes in CTI ratio of the banks. The overall significance of the model was validated by the F -ratio of 7.209339 with a corresponding $Prob(F) = 0.002$. Therefore, at a 5% level of significance, the CTI ratio influences profit before tax of quoted deposit money banks in Nigeria.

Generally, the results in Appendix Table 1 on data ratios on ROA & CTI from the regression descriptive statistics revealed that GTB Plc has a positive growth trend in ROA followed by First Bank for the six years (2015-2020)

covered by the study. GTB Plc maintains a steady decline in CTI ratio for the same period (2015-2020) followed by First Bank and Zenith Bank Plc. By extension, these results imply that banks with positive growth trends in ROA have a higher potential for Earning Generation Capacities (EGC), while banks with reduced CTI ratios have greater potential for Earnings Retention Capacities (ERC).

The result of this study is at variance with the findings of Inyama and Ugwuanyi (2016), Mundi (2019) and Olarewaju (2016) which posited that streams of income, capital base and age of banks determine the financial performance of DMBs. However, the findings share some convergences with the results of Alhadab and Al-Own (2017) and Ugoani (2016) who asserted that gross earnings (interest income, commission, charges and other fees) and earning practices of banks' management affect banks' financial performance. In all the studies reviewed both locally and internationally, none to the best knowledge of the researchers has reviewed how efficiencies in ROA and CTI dovetail to better Earning Generation Capacities (EGC) and Earnings Retention Capacities (ERC) for deposit money banks in Nigeria, which is the gap that motivated this study. The study is unique that the data (ROA, CTI & PBT) used for analysis are derived from accounting figures disclosed by the deposit money banks in their annual reports.

Conclusion

This study revealed that an increase in ROA by a margin will increase the profit before tax and also a decrease in CTI will positively affect profit before tax at a 5% significant level. This study further shows banks which are efficient in ROA and CTI ratios have better Earning Generation Capacities (EGC) and Earnings Retention Capacities (ERC) among the deposit money banks in Nigeria. It

therefore implies that earning generation and retention capacities of DMBs are dependent on efficient asset utilization and prudent cost management practices, rather than age or streams of earnings of the banks.

Recommendations

Based on the findings of this study, the following recommendations have been outlined which may be useful to the banks, shareholders and other stakeholders who may benefit from the sound financial performance of the deposit money banks:

1. DMBs need to improve on their asset utilisation efficiency strategies to boost their profitability leap and strengthen the going concern capacity of DMBs in meeting shareholders' return expectations.
2. DMBs need to adopt effective in-house cost curtailment strategies, especially on Procurement and Equipment Asset Maintenance Costs (PEAMC).
3. DMBs need to drive and cascade cost-efficiency practices within all cadres of their management or workforce to constantly improve their CTI ratio which would boost their earnings retention capacities (ERC)

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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APPENDIX

Appendix Table 1. Data extracts and ratios.

Bank	Year	ROA	CTI	PBT	Assets	BSZ
First Bank	2015	0.0070	88.00	35727	4166189	6.6197
	2016	0.0070	40.00	40089	4738806	6.6757
	2017	0.0070	31.50	46708	5236537	6.7190
	2018	0.0100	31.00	63776	5588909	6.7473
	2019	0.0110	30.50	82907	6203526	6.7926
	2020	0.0120	22.40	97841	7689028	6.8859
Zenith Bank	2015	0.0350	38.70	125616	3750327	6.5741
	2016	0.0370	35.40	151348	4283736	6.6318
	2017	0.0430	30.90	199319	4833658	6.6843
	2018	0.0420	49.30	231685	5955710	6.7749
	2019	0.0390	48.80	243294	6346879	6.8026
	2020	0.0320	31.90	255801	7124987	6.8528
UBA	2015	0.0220	76.90	50735	2216337	6.3456
	2016	0.0240	76.30	57647	2539585	6.4048
	2017	0.0200	39.70	52795	2931826	6.4671
	2018	0.0160	45.60	55350	3591305	6.5553
	2019	0.0180	39.80	70063	4136493	6.6166
	2020	0.0100	66.20	58360	5207833	6.7167
GTB	2015	0.0510	53.90	113027	2277629	6.3575
	2016	0.0570	37.70	151368	2613340	6.4172
	2017	0.0670	45.30	183647	2824078	6.4509
	2018	0.0680	42.70	189971	2711582	6.4332
	2019	0.0700	33.70	200177	3097248	6.4910
	2020	0.0730	31.20	205130	4061543	6.6087
Access Bank	2015	0.0290	78.40	65177	2411944	6.3824
	2016	0.0280	76.30	78230	3094960	6.4907
	2017	0.0190	83.60	65140	3499683	6.5440
	2018	0.0200	84.60	75248	3968114	6.5986
	2019	0.0160	85.60	82666	6311041	6.8001
	2020	0.0100	72.70	90159	7624979	6.8822
Fidelity Bank	2015	0.0110	82.10	14024	1231722	6.0905
	2016	0.0480	89.50	6131	1298141	6.1133
	2017	0.0140	77.70	19213	1379214	6.1396
	2018	0.0160	78.10	25089	1719883	6.2355
	2019	0.0150	67.20	30353	2114037	6.3251
	2020	0.0900	79.10	28054	2758148	6.4406
Eco Bank	2015	0.0400	64.90	40282	4628164	6.6654
	2016	-0.0900	62.70	-39889	6245295	6.7956
	2017	0.1100	61.80	87984	6852670	6.8359
	2018	0.1500	61.50	133327	6896863	6.8387
	2019	0.1700	66.10	123930	7059726	6.8488
	2020	0.1400	63.10	115080	6936419	6.8411

Source: Analysis output (2022) using E-view Version 9.