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Effect of earnings quality on efficiency of quoted deposit money banks in Nigeria

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Abstract

An unqualified information on the quality of earnings of a corporate organization provides assurances of realistic expectation of its future earnings. It also serves as a tool for negotiations and valuation deals in mergers, takeovers and acquisition. The aim of this study was to find out effect of earnings quality on the efficiency of deposit money banks in Nigeria. The study employed secondary data from selected nine (9) listed deposit money banks (DMBs) with international operations authorization for ten years period spanning 2011 – 2020. Panel regression approach was adopted for the study as the data obtained was cross-sectional (i.e. Panel) such that the behavior of variables were observed over time with specific efficiency test scores derived by conducting data envelopment analysis (DEA) to decompose the model. The result of the analysis shows that there is a significant positive relationship between quality of earnings and the efficiency of Deposit Money Banks in Nigeria. The study therefore establishes that Bank earning quality is significant in predicting the efficiency and sustainability of Deposit Money Banks and therefore recommends strict ethical adherence to provisions of accounting standards with internal control monitoring safeguards mechanism for management to ensure sustainability and secured going concern.

Keywords: Bank Earnings Quality; Bank Efficiency; Cash Conversion ratio; Accrual ratio; Transaction cost theory

1 Introduction

Banks and other financial institutions across the globe is adjusting to changes in economic realities and its impact on financial market leading to: declines in consumer discretionary spending, causing major restructuring activities, deteriorating credit and book debts and business liquidity concerns, Amidst these phenomena and other emerging challenges, many resilient banks intensify efforts to survive the tides and are forced to explore other business models which continue to shift from their core functions of granting loans and accepting deposits from the public to fee-based services such as digitalization, agency, mobile, online and internet financial services. However, the thrust of all Deposit Money Banks (DMBs) was and is still primarily financial intermediation, that is, to accept deposit from surplus sector and deploy to deficit sector by creating optimal mix of assets-returns trade off.

Bank earnings quality is a measure of how reliable a company's earnings are for assessing a company's current and future performance. Earnings quality, in accounting, refers to the ability of reported earnings on the face of financial statement to predict a company's future earnings and guarantee sustainability. It is an assessment criterion for how "repeatable, controllable and bankable a firm's earnings are, amongst other factors, and has variously been viewed as the degree to which earnings reflect underlying economic effects; of better estimates of cash flows, conservatism, or predictability.

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Efficiency is the ability to turn assets into high revenue yield by reducing the level of relevant cost and expenses. Efficiency can be seen as a production of a given output with fewer inputs or utilizing a given set of inputs to produce greater output (Dalley & Matthews, 2009). Efficiency could be “Technical or operational” but often assessed either in terms of the economic principle with the comparison of two factors mainly resource deployment and productivity. Bank Efficiency is thus the tactical deployment of resources to maintain a safe balance between cost and productivity or minimum combination of inputs (assets and liabilities) necessary to produce maximum level of outputs (income) in banking operations. Hence, this study reviews Bank efficiency regarding its operations, activities and transactions over the period. A bank’s efficiency ratio tells you how profitable and how prudent the bank assets are utilized to guarantee the level of productivity, which indicates its level of financial soundness and stability. Deposit Money Banks income can generally be divided into interest and non-interest income. A bank that earn more interest from its assets than it pays out on its liabilities among others could be viewed on the one part as more profitable and efficient. However, bank efficiency broadly encompasses financial, managerial, credit compliance and operational efficiency. Bank efficiency is the most important area of bank performance measurement, as such, an in-depth look into the efficiency of deposit money banks have become inevitable

1.1 Objectives of the Study

The objective of this study is to examine the effect of bank earning quality on efficiency of Deposit Money banks in Nigeria and the specific objectives are to;

- Evaluate effect of cash conversion ratio on Efficiency of listed Deposit Money Banks in Nigeria
- Analyse effect of accrual ratio on Efficiency of listed Deposit Money Banks in Nigeria.

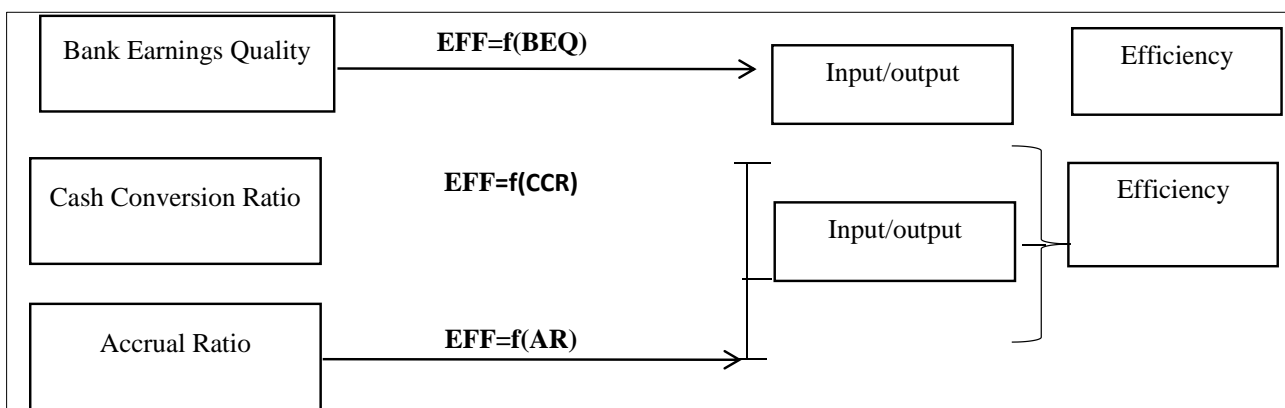


Figure 1 Researcher Model of Bank earnings quality and efficiency, 2023

1.2 Transaction Cost Theory

The works of renowned Nobel laureates (Williamson, 1985) on transaction cost theory (TCT), or transaction cost economics, has become one of the most influential theories in management research. Transaction costs as "the costs of negotiating, monitoring, and enforcing the exchanges between parties to a transaction" measure the efficiency of a transaction (Bowen & Jones, 1986). Identifying the costs of coordinating bank operations, TCT hinges on two behavioral assumptions: one is bounded rationality, the other is opportunism. Owing to those two conditions, transaction costs actually evolve because assets, investment and other process features are transaction-specific. Thus, service provider and customer, as the transaction partners, become dependent on each other.

An asset is specific to a particular transaction if its value in its next-best use (i.e., in a transaction with a different party) is lower than in the present transaction. The greater the difference between the value of an asset in its first-best and next-best use, the greater the degree of asset specificity. The convergence characteristics of bank technical and operational efficiency explores such influential factors of as interest income ratio, net interest margin, and their relative growth rate of total investment on assets employed. The cost-to-income ratio has a correlation of input to output efficiency scores of the Banks. This study anchors on the transaction cost theory.

1.3 Bank Earning Quality

The concept of earnings quality has roots in the judgmental nature of accounting, which can be seen in the fact the different parties may interpret the economics underlying a transaction differently, and different firms may have different business characteristics. The preparation and presentation of company's financial statements are the responsibility of management, hence management chooses different methods of preparation, presentation and interpretation of those financial statements. This use of judgment by management thus increases the chances that the earnings presented in the financial statements may have been manipulated. This discretion, increases the possibility for management to make both honest mistakes, such as the accidental use of a wrong useful life, or to manipulate earnings. However, the criteria for earnings to be considered high or low quality differs between interested parties or users, depending on the underlying concept whether sustainability of earnings or method of reporting.

Bikker J. (2011) describe earnings quality as the ability of current reported earnings to reflect the future cash flow and earnings. In this context, earnings quality refers to how best current reported earnings can predict future performance of entity such that it is repeatable and sustainable. Abedin (2017) defines earnings as the amount accruing in form of net profit from operations over a period either per quarter, half year or a fiscal year. One of the cardinal objectives of regulatory framework for Accounting and Reporting for an entity is to provide information about earnings and its components. Users of financial statements can use earnings information to examine the performance of management; estimate earnings power of interest bearing asset, predict future earnings from resources, and assess the risk. Earnings quality also refers to the reasonableness of reported earnings (Coelli & Battesse, 2005).

Diallo (2018) has defined earnings quality as different rates of reported earnings in the income statement with 'real profits' Leong (2003) identifies earnings quality as the variation between 'true earnings' and reported earnings. Because net profits are often used as a reference for investors in investing, the reported net profits for banks, must be of high quality. Earnings quality gives a clear picture of the true state and financial health of a bank is profit and more importantly for making decisions by its users. Ariff & Chee (2001) defines earnings as of good quality if it is a good indicator of future earnings, which is also close to the sustainability principle of a bank.

Deposit Money Banks may have high earnings quality if it can achieve reported earnings persistently and on a sustainable basis from its operations not just as transitory earnings. Bellorary et al, (2005) noted that earnings quality could be seen from the level of variability, where with a high level of variability means low profit quality, low level of variability reflects high profit quality. Earnings quality goes beyond net operating profit after tax, it reflects a positive point as bank's value added that expresses the financial health of a corporate entity because it indicates ability of reporting entity through sustainable and consistent actual profit of a company. Harker & Zenios, (2000) described earnings quality as the ability of reporting entity to reflect the actual income of a bank from underlying core business. In their opinion, earnings of banks are considered to be of high quality when they are sustainable, healthy and growing from the core underlying intermediation objects rather than income derivable from venturing into other services even if they earn more income from these sources than their core income lines. Earnings to a bank indicates the extent to which management is putting its assets into productive use to generate income, as they are necessary to support the operations of the bank.

Earnings quality is an important indicator of the financial health and use of a corporate asset of an entity. Dechow and Schrand (2004) describe earnings quality from an analyst's viewpoint and asserted that earnings are of a high quality if they can be useful to determine a company's value, truthfully represent the current operating performance of a company, and are a reliable pointer of the company's future operating performance. Users of financial statement may also define earnings quality in terms of the 'absence of earnings management'. This is because the intentional manipulation of earnings by managers, within the limits possible in accounting standards, may distort the usefulness of earnings. Earnings that are persistent and predictable may not be of high quality if it is a result of earnings management. Evaluating the quality of earnings helps financial statement users make judgments about the "certainty" of current income and the prospects for the future (Deloitte 2004). The long-term viability of a bank depends greatly on its ability to generate sufficient earnings to protect and enhance its earnings. Arslan (2017) observed that three elements encompass aspects of quality earnings; a clear indication of recurrent costs and revenues, clear indication of performance of the firm's core business, and a direct link of cash flow with earnings.

The cash conversion ratio (CCR) assesses a company's efficiency in converting its assets into cash; it's a measurement index for cash generation capability and assessing quality of earnings expressed as either a multiple or as a percentage. A higher CCR (1.0x) is better than a lower CCR as it indicates that the bank is able to convert majority of its earnings into cash. It is important to note that business may report high earnings, but needs more income to be converted to cash quickly to meet both short-term and long-term funding. A high CCR is often the result of efficient working capital

management, but a low CCR (1.0x) suggest that a company is concealing poor underlying performance. This is because cash flows are often affected by poor performance before profits.

The accrual ratio is the ratio of the accrual component of earnings scaled by average net operating assets. In accounting literature, accruals ratio in view of balance sheet represent "the difference between net operating assets at the end of a period and the beginning of the period compared to the average net operating assets over the period. Analyst will always try to remove bias by disaggregating earnings into cash flows and accruals, thus the accrual ratio method is used to analyze the persistence and sustainability of bank earnings. A low cash conversion ratio and a high accruals ratio is an indicator of low earnings quality whilst a high cash conversion ratio and a low accruals ratio is an indicator of high earnings quality

1.4 Bank Efficiency

According to Drucker (1963), efficiency can be defined as the ability of an organization to achieve its output from the minimum input level. Efficiency could be seen as a production of a given output with fewer inputs or utilizing a given set of inputs to produce greater output (Daley & Matthews, 2007). It is not about increasing income, but also how the costs are controlled. Farrell (1957) defined "Efficiency" as the maximization of outputs in such a way the input resources are less utilized. Banking efficiency is defined as difference between observed quality of input and output variables with respect to optimal quality of input and output variables. Drake and Hall (2013) noted that bank's efficiency could increase impressively if more sales and credits are processed and many customers are served. The information gotten from assessing the performance of a bank can be used to enhance overall efficiency of operations while contributing to competitiveness (Hasan & Jreisat 2016).

Coelli, Rao & Battese (2005) defined efficiency as when an organization is producing at its maximum in relation to its input. The concept of efficiency in this study is viewed from the perspectives of cost efficiency", which can be achieved when the firms find a combination of inputs that makes them able to produce the desired out-puts at minimum cost. Cost efficiency is the product or mixture of the technical and allocation efficiencies (Ping-wen, 2002). Ping-wen, (2002) assert that efficiency using cost efficiency is computed by dividing total operating expenses by total income.

There are several factors which may increase the quality of operation while decreasing their operational costs. The key factors to banking success are how to reduce and control the costs and maximize the utilization of resources (Awuor 2008) In view of this, efficiency is how a bank utilizes its costs or effort to obtain maximum output. Efficiency involves obtaining the maximum output using the minimum input, financial institutions and the financial sector operate in an environment that is dynamic hence efficiency is a key component in achieving a stability of the financial system.

1.5 Assessment of Sustainability and Predictability of Earnings

There are different school of thought on earnings quality, and different methods of assessment, this sometimes lead to contradictions between methods. For example, using only the criteria of correlation between reported earnings and underlying economic events, accelerated depreciation may give rise to higher-quality earnings than straight-line depreciation, while the converse is true if one uses only the criteria of predictability of earnings. Earnings are somewhat considered to be of high quality when they are sustainable. Management is responsible for the preparation and fair presentation of consolidated financial statement of Banks in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatements, whether due to fraud or error. The quality of the earnings can be lowered based on different ways accounting choices such as: recording revenue too soon or of questionable quality, recording fictitious revenue, boosting income with one-time gains, shifting current expense to a different period, failing to record or improperly reducing liabilities, shifting current revenue to a later period, and shifting future expenses to the current period as a special charge

An assessment of earnings quality would therefore be based on other factors, such as: correlation between reported earnings and underlying economic activity, continuity and sustainability of reported earnings, relationship between reported earnings and market valuation, extent and impact of discretionary accruals, transparency and completeness of disclosures, impact of low reported earnings on corporate image, company's handling of "bad news," and degree to which earnings are good estimates of cash flows. They characterized accrual quality, persistence, predictability, and smoothness as accounting-based attributes because these are measured using accounting information only, whereas value relevance, timeliness, and conservatism are referred to as market-based attributes since these are based on the relationship between cash flows and reported profits.

1.6 Empirical Review

Empirical studies such as Dechow and Schrand (2004) and other scholars reviewed in this study shows varied earnings quality metrics and a large amount of their result revealed that in general, earnings considered as being of high quality are those that are sustainable with a given level of continuity, and are more predictable, less volatile, and have lower level of risk and/or higher accrual quality. Dechow, et al (2004) separate the proxies of earnings quality in a slightly different manner as they distinguish between a 'true' component of earnings, reflecting the real underlying cash flows from interest bearing assets and investment, and an element of error induced by the accounting choices of management reporting.

Hassan (2016) examined the impact of firms attributes on the quality of earnings of listed deposit money banks in Nigeria between 2008 and 2013. The study adopted a pre and post IFRS adoption approach i.e. 3 years before IDRS adoption (2008 – 2010) and three years after (2011 – 2013). He adopted correlational research design using a balanced panel data set from 14 banks as sample of the study using multiple regression as a tool of analysis. He found that firm's attributes such as financial leverage, profitability, liquidity, bank size and bank returns have very strong influence on earnings quality of listed deposit money banks in Nigeria after the adoption of IFRS, while the pre period shows that the selected firm attributes have no meaningful impact on their earnings quality. The above study is outmoded and since it was conducted in 2015 using commercial banks in Nigeria. However, similar study can be conducted in 2020 using the same variables but improve by introducing control variables that impacted corporate performance.

2 Methodology

This study utilized ex-post facto research designs. The study makes use of panel data for the period of ten (10) years spanning through 2011 -2020 to examine the effect of bank earnings quality on efficiency. The population of this study comprises of 14 listed deposit money Banks in Nigeria trading on the floor of the Nigerian Exchange Group as at June 2023. However the study used set criteria of Deposit Money Banks licensed with international operations authorizations to restrict the sample size to nine (9) DMBs in Nigeria namely (Access Bank Plc, Fidelity Bank Plc, First City Monument Bank Plc (FCMB), First Bank Nigeria Limited, Guaranty Trust Bank Plc, Union Bank of Nigeria Plc, United Bank of Africa Plc (UBA) Stanbic IBTC and Zenith Bank Plc). It is important to note that DMBs licensed Banks with international operations authorizations are of paramount interest to major foreign investors.

2.1 Measurement of Variables.

The table below shows the summaries of how the independent, dependent and control variables were measured in the study.

Table 1 Independent, dependent and control variables.

Variables	Measures	Authors
Cash Conversion Ratio (CCR)	Cash flows / operating profits	Casmir (2017)
Accrual Ratio (AR)	Operating income - cash flows / Total asset	Berhan (2015)
Input	Employees cost, I T & equipment cost, cost of loan creation, cost of recovery	Coelli (2005)
Output	Operating income, Gross Operating profit ,Net interest Margin & Bank value added,	Coelli (2005)
Bank Size	Bank total asset, Bank total deposit liability.	Aberdin (2017)

2.2 Model Specification

The study used econometric models expressed functionally as BEQ_t (Bank earning quality) and Efficiency (EFF_t)

The model is stated below:

$$Eff_{it} = \alpha + \beta_1 BEQ_{it} + \beta_2 BS_{it}$$

Where: Eff_{it} is the efficiency of Bank i at time t

BEQ_{it} is the earning quality of bank i at time t

BS_{it} is the bank size i at time t (Bank total deposit liabilities and assets)

$$EFF_t = \frac{\text{Weighted units of output}}{\text{Weighted units of input}}$$

3 Analysis and results

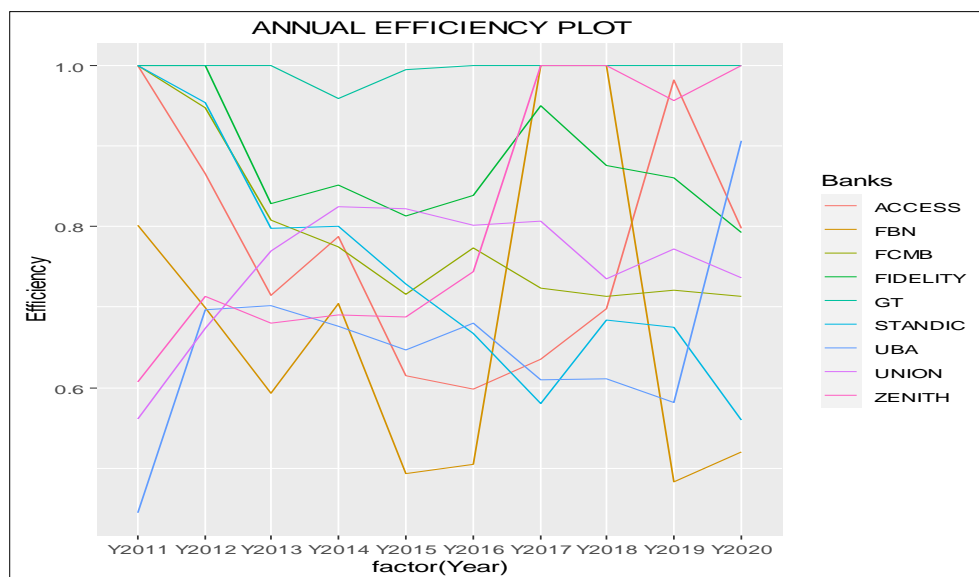
3.1 Data Envelopment Analysis (DEA)

DEA model computes the ratio of the total weighted bank output divided by the total weighted bank inputs of aggregate decision making units (DMUs). The model was used to find a single efficiency scores from the set of weighted input-output efficiency variables of sample banks.

Table 2 Bank Efficiency Test Scores

BANK	ACCESS	FIDELITY	FBN	FCMB	GTBANK	STANBC	UNION	UBA	ZENITH
2011	1.00	1.00	0.80	1.00	1.00	1.00	0.56	0.44	0.61
2012	0.87	1.00	0.70	0.95	1.00	0.95	0.67	0.70	0.71
2013	0.72	0.82	0.59	0.81	1.00	0.80	0.77	0.70	0.68
2014	0.79	0.85	0.70	0.77	0.96	0.80	0.82	0.68	0.69
2015	0.61	0.81	0.49	0.72	0.99	0.73	0.82	0.65	0.69
2016	0.60	0.84	0.50	0.77	1.00	0.67	0.80	0.68	0.74
2017	0.63	0.95	1.00	0.72	1.00	0.58	0.81	0.61	1.00
2018	0.70	0.88	1.00	0.71	1.00	0.68	0.74	0.61	1.00
2019	0.98	0.86	0.48	0.72	1.00	0.68	0.77	0.58	0.96
2020	0.80	0.79	0.52	0.71	1.00	0.56	0.74	0.9127	1.00

Source: DEA Model 14: Researchers computation (2023)



Source: Author's Plot using STATA 14.

Figure 2 Bank Efficiency Test graph.

3.2 Descriptive Statistics

The study describes the nature and characteristics of data in terms of behavioral tendencies and normality using the table below:

Table 3 Descriptive Statistics of the variables

	Count	Minimum	Maximum	Sum	Mean	Median	Standard Error	Standard Deviation
EFF.SCORES	90	0.44	1.00	70.74	0.79	0.77	0.02	0.15
BEQ	90	60.16	118.33	6574.79	73.05	71.79	0.75	7.16

Source: STATA 14: Researchers computation (2023)

Descriptive statistics shows profile of variables examined in this study. It clearly showed that earning quality had a mean value of 73.05, median of 71.79, which indicates that on average more than 70% efficiency scores. However, an efficiency scores equal to 100% is the benchmark for an efficient Bank. This implies that deposit money banks in Nigeria achieve average earnings quality of 0.73 for every 1.0 operating income.

Table 4 Correlation Matrix

	EFF	BLPEQ	BDL	BAG
EFF	1.0000			
BEQ	0.3127	1.0000		
ccr	-0.0348	-0.3401	1.0000	
ar	-0.1374	-0.1781	0.7108	1.0000

Source: STATA 14: Researchers computation (2023)

The result of the Pearson correlations indicated absence of multicollinearity since none of the variables outcome exceeded 0.90.(Pallant, 2007) at (BEQ, r,0.3127)

The study also carried out hausman specification test to ascertain either choosing fixed model or random effect model and further check for presence of multicollinearity problem among the variables.

Table 5 Hausman Specification Test

Correlated Random Effects - Hausman Test		
Test cross-section random effects		
Tests	Chi square	P-value
Hausman specification test	0.79	0.6069

Source: STATA 14: Researcher computation (2023)

The Test indicates Random Effect Model is most appropriate given that chi2 is 0.79 and the prob>chi2 is 0.6069 which is not significant at 5% level of significance. A cluster and robust standard error version of random effect was selected.

Table 6 Variance Inflation Factor (VIF)

Variables	VIF	1/VIF
BEQ	2.05	0.488081
CCR	2.05	0.488776

AR	1.02	0.984944
Mean VIF	1.70	

Source: STATA 14: Researchers computation (2023)

Tables 6 above provide evidence that there is no existence of excessive correlation among the independent variables, as the highest variance inflation factor (VIF) is 2.05. Then, if the p-value is less than or equal to 5%, then there is proof to reject the null hypothesis. This indicates that, the VIF are less than 10 respectively. Thus, the study concludes that there is no problem of multicollinearity provided that multicollinearity only exists when the VIF is greater than 10.

Table 7 Regression Analysis

Variables	Coefficients	Standard error	T-statistic	P>T
BLPEQ	0.068	0.023	3.31	0.001
BDL	-3.15	1.83	-0.17	0.864
BAG	-6.78	5.33	-1.27	0.207
CONSTANT	1.40	0.18	7.86	0.000
F-STAT	1.538			0.005
R ²	0.7366			
R ² Adjusted	0.5065			

Source: STATA 14: Researchers computation (2023)

Table 7 above revealed the outcome of panel regression result. The coefficient of determination R² which stood at a value of 0.7366 of efficiency revealed that about 73% of variations in the dependent variable were accounted for by the independent variables while remaining 27% were not accounted but captured as error term. Similarly after adjusting the degree of freedom, the adjusted R² stood at 0.506 efficiency level implying that over 50% of the changes in the dependent variable were explained while about 49% of the implicit variations are unexplained. The overall results showed significant value 1.538 compared with constant standard error of 0.180 suggesting that the results are capable of meaningful policy prediction.

First, results showed that Bank earning quality is statistically significant indicating that it a strong predictive factor to Bank efficiency. The positive coefficient value signifies that increase in earning quality leads to improved Bank efficiency. The acceptable computation of nominal efficiency ratio from DEA model was positive. If the result is between 0-1, we have relative efficiency while anything greater than 1, means the Bank has a higher ability to convert its profit into cash flows and liquidity. However, negative result means inefficiency. This is consistent with extant studies of Abedin (2018) who did establish a significant positive relationship between Bank performance and efficiency.

Secondly, it was found that absolute performance figures of deposit money banks set on the pages of financial statement do not show their relative earning efficiency given the average of 0.73 scores to 1.0 benchmark indicator. DEA analysis clearly and succinctly reveal that desirable performance output for Banks under the banking prudential guidelines are still below 1 meaning that the percentage of cash flows from the reported net operating profit are below efficiency benchmark.

Thirdly, on the basis of Bank size proxied by bank total deposit liabilities and assets it was found that they were statistically insignificant using the CRR and AR approach. This implies that the quality of Bank earnings from operations is not a function of how big the Bank in terms of capitalization but more importantly, the quality of actual cash generated by the bank resulting in their financial and liquidity condition, relative to expectations of current and future profitability and sustainability.

4 Conclusion

The study concludes that earnings quality has significant positive effect on bank efficiency in Nigeria whilst earnings quality admits with reliability that on the average, there are tendencies of over 73% efficiency scorecard for every 100% measurement frontiers of Bank earnings.

Recommendation

The study therefore recommends from the findings that:

The management and board of Deposit Money Banks in Nigeria are admonished to enhance the quality of reported earnings by strict adherence to prudential guidelines and basic accounting standards and policies, while checkmating management insider dealings as well as discouraging the manipulation of accounts when preparing financial statements. The bank financial reporting framework should constantly be reviewed by Central Bank of Nigeria to accommodate test for efficiency under the oversight of Financial Reporting Council of Nigeria.

Compliance with ethical standards

Disclosure of conflict of interest

There are no conflict of interest regarding this study. The article was functionally written from authors ideas, ownership and originality.

References

- [1] Abedin T.(2017). Impacts of Banking Sector Efficiency and profitability on Bangladesh Economy, *Economics Bulletin* 8 (3), 289-304.
- [2] Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Factors Influencing the Profitability Of Conventional Banks of Pakistan. *International Research Journal of Finance And Economics*, 117-124.
- [3] Allen B, Linda C, Rai Y(1996) "Operational Efficiency in banking :An international comparison", *Journal of banking and finance*, Vol. 20, No 10 pp 655-672
- [4] Anderson, P & Peterson , N (2003) Procedure for ranking efficient units in Data Envelopment Analysis, *Management Sciences* 39 (10) 1261- 1264
- [5] Ariff, M., & Chee, L. C. (2001). Mobilizing Domestic and External Resources For Economic Development: Lessons From The Malaysian Experience. *Asia-Pacific Development Journal*, 41-43.
- [6] Arslan, Y., & Upper, C. (2017). Macropprudential Frameworks: Implementation And Effectiveness. *BIS Papers* No 94, 25 - 47.
- [7] Aruwa, S. A., & Naburgi, M. M. (2014). Impact Of Capital Adequacy on The FinancialPerformance of Quoted Deposit Money Banks in Nigeria. 4th Conference of Faculty of Administration, Nasarawa State University, Keffi, Nasarawa State, Nigeria.
- [8] Awuor, C. (2008). *A Survey of The Use of Financial Ratios Commercial Banks*. Unpublished MBA Project.
- [9] Basell Committee. (1999). Principles for The Management of Credit Risk. Consultative Paper, The Basel Committee On Banking Supervision. Basel Committee.
- [10] Bellorary, J. L, Giacomino, D. C. & Akers, M. D. (2005).Earnings Quality: It's Time toMeasure and Report. *The CPAJournal*,32-37
- [11] Bikker, J. A., & Bos, J. W. (2008). *Bank Performance, A Theoretical and Empirical Framework for the Analysis of Profitability, Competition ond Efficiency*. New York: Routledge
- [12] Central Bank of Nigeria (2014). Consolidated banking supervision annual report (2009 –2014). www.centralbankofnigeria.gov.ng. Abuja.
- [13] Charnes, A., Cooper, W. & Rhodes, E. (1978). Measuring the efficiency of decision-makingunits *European Journal of Operational Research*, 2, 429–444.
- [14] Cherkasova, V., & Rasadi, D. (2017). Earnings Quality and Investment Efficiency: Evidence From Eastern Europe. *Review Of Economic Perspectives*, 441–468.
- [15] Coelli, T. Rao, D. & Battese, G. (2005). *An Introduction to Efficiency and Productivity of Commercial Banks Analysis* (2nd Edition). Springer Science & Business Media, LLC.
- [16] Cooper, W, Seiford, L Tone, K. 2007. *Data envelopment analysis: a comprehensive text with Models, applications, references and DEA-solver software*. New York: Springer.

- [17] Cornett, M., Mcnutt, J., & Tehranian, H. (2009). Corporate Governance and Earnings Management At Large U.S. Bank Holding Companies. *Journal Of Corporate Finance*, 423-430.
- [18] Dalley, J. & Matthews, K. (2009). Measuring bank efficiency: tradition or sophistication?. *Cardiff Economics Working Papers*.
- [19] Darrat, A, Topuz, C. & Yousef, T. (2002). Assessing Cost and Technical Efficiency of Banks in Kuwait. *Proceedings of the ERF's Annual Conference*, Cairo, 1-22.
- [20] Daraio, C.; Simar, L. 2007. Advanced robust and nonparametric methods in efficiency analysis Methodology and applications. New York: Springer
- [21] Dechow, P., & Schrand, C. (2004). *Earnings Quality*. The Research Foundation of CFA Institute.
- [22] Deloitte (2004). *Quality of Earnings. Integrity & Quality: Quality of Earnings*. Deloitte & Touché.
- [23] Diallo, B., 2018. Bank efficiency and industry growth during financial crises. *Economic Modelling* 68: 11–22.
- [24] Drucker, P. (1963). Managing for Business Effectiveness. *Harvard Business Review*. 41(3), 53-60
- [25] Farrell, M. J. (1957). The Measurement of Productive Efficiency. *Journal of the Royal Statistical Society*, 120 (3) 253–81.
- [26] Fries, S., Taci, A. (2004) "Cost Efficiency of Banks in Transition: Evidence from 289 Banks In 15 Post-Communist Countries. *Journal of Banking and Finance* 29, 55–81
- [27] Harimaya, K., Kondo, K., (2016). Effects of branch expansion on bank efficiency: evidence from Japanese regional banks. *Managerial Finance* 42 (2) 82 – 94.
- [28] Harker, P. & Zenios, S. (2000) Performance of Financial Institutions, Efficiency, Innovation, Regulation. Cambridge, UK: Cambridge University Press. 259–311
- [29] Hauner D & Peiris S, (December 2005) "Bank efficiency and competition in low income countries: the case of Uganda." IMF Working Paper
- [30] Hassan, M. & Hussein, K. (2003). Static and Dynamic Efficiency in the Sudanese Banking System *Review of Islamic Economics* 14, 5-48
- [31] Hassan, M. & Jreisat, A. (2016). Does Bank Efficiency Matter? A Case of Egypt, 6(2), 473–478.
- [32] Hughes, J. & Meter, L. (2008). Efficiency in Banking: Theory, Practice, and Evidence. *Oxford Handbook of Banking*.
- [33] Leong, W. Dollery, B. & Coelli, T. (2003). "Measuring Technical Efficiency of Banks in Singapore for the period 1993-1999: An Application and Extension of the Bauer et al (1997) Technique. *ASEAN Economic Bulletin*, 20(3): 195-210.
- [34] Leightner J & Lovell K, (1998) "The impact of financial liberalization on the performance of Thai banks" *Journal of Economics and Business*, Vol. 50 No 2, 115-131.
- [35] Ping-wen, L. (2002). "Cost efficiency analysis of commercial bank mergers in Taiwan" *International Journal of Management*, pp 408-417.
- [36] Williamson. (1985). "Transaction cost theory, Analysis of management research, *Oxford University press*.
- [37] Bowen & Jones (1986) Transaction Cost Economics, theory and practice, *Oxford Handbook of Economics*