



**COMPETITIVE ADVANTAGE AND PROFIT EFFICIENCY AMONG LISTED
DEPOSIT MONEY BANKS IN NIGERIA**

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Abstract

This study examines the effect of competitive advantage on profit efficiency among Nigerian banks. It employed a longitudinal research design and drew on secondary data from annual accounts of selected banks (2008-2024). The population comprised 14 publicly quoted Deposit Money Banks in Nigeria, from which 11 quoted banks were chosen using a purposive sampling technique. The Panel Generalized Method of Moments (GMM) was applied. The finding indicated that the level of profit efficiency gradually declined from 2022 to 2024, possibly due to an increase in the number of wallet banking transactions. Additionally, the finding showed that competitive advantages negatively and substantially affect profit efficiency (coeff.= -0.7226; $p < 0.05$). The implication of the finding is that banks need to shift focus from merely achieving competitive advantages to enhancing operational efficiencies. This involves making operations more efficient, lowering costs, and providing better customer service, all of which can help improve profit efficiency.

Keywords: Competitive advantage, profit efficiency, Nigerian Banks,

1.0 Introduction

Banks are crucial intermediaries between lenders and borrowers, driving output and fostering significant economic growth. Their stability is essential; any disruption can lead to financial turmoil and threaten economic security. Thus, a robust banking system is foundational to a market economy, prompting regulators to ensure both efficiency and stability. In emerging markets like Nigeria, the banking sector faces challenges such as excessive market power, weak legal frameworks, and high corruption. These issues can hinder competition compared to developed banking systems. Recent decades have seen remarkable growth in the banking sector, with significant improvements in service quality following the deregulation of the Nigerian banking sector in 2006 (Onuoha & Olori, 2017). This increased competition pushed banks to innovate and develop strategies for market share and profitability (Oghojafor, 2014). Given their vital role and the heightened competition from evolving technologies, understanding the factors



influencing profit efficiency is essential (Pilar et al., 2018). Profit efficiency serves as a key indicator of performance, reflecting how well a bank maximizes revenues while managing costs, which is critical for long-term success (Arbelo et al., 2021).

Measuring profit efficiency in banks is crucial for assessing how effectively they manage resources and achieve goals, particularly in Nigeria. While previous studies Battese and Coeli (2014); Pilar et al., (2018) focused on cost efficiency—evaluating how closely a bank's costs align with those of best-practice firms—profit efficiency offers a more comprehensive view. It accounts for inaccuracies in both inputs and outputs (Berger & Mester, 1997; Pilar et al., 2018). Fitzpatrick and McQuinn (2008) define profit efficiency as overall efficiency, indicating that banks that excel in earnings also manage expenses effectively. Thus, for bank managers, calculating profit efficiency is far more important than relying solely on cost efficiency analysis (Maudos et al., 2002). Additionally, Arbelo-Pérez et al. (2017) show that profit inefficiency often exceeds cost inefficiency in various industries.

Bank competition is crucial for understanding how changes in the banking sector impact social welfare. The level of competition in finance affects product quality, innovation, and service efficiency (Claessen & Leaven, 2004). Healthy competition can lower costs, reduce management leeway, and stimulate technological advancement (Zhao & Murinde, 2009), while motivating banks to take more risks and diminishing monopoly profits. In Nigeria, banks have suffered failures due to an overemphasis on financial performance, harming their reputation and leading to profit inefficiencies (Torre-Olmo et al., 2021). Attempts to rebuild trust through competitive strategies have shown a lack of understanding in applying these tactics effectively, as seen in the recent takeover of Skye Bank by Apex Bank. Increased bank failures have prompted mergers and highlighted poor strategies and a lack of competitive advantage in the sector (Onuoha & Olori, 2017). Understanding market competitiveness is essential; low competition can lead to higher loan interest rates and increased credit risk for borrowers (Mishi et al., 2016). Conversely, fostering competition can enhance access to financial services and improve overall economic well-being. Yet, it may also encourage riskier behavior as banks strive to lower prices (Allen & Gale, 2000; Pilar et al., 2018;). Therefore, strengthening management and organizational systems is key to achieving a competitive edge in today's dynamic environment.

Competition does not always lead to financial stability. It can compel banks to take on greater risks, particularly when they are pressured to lower service prices (Allen & Gale, 2000; Pilar et al., 2018). For businesses in such a dynamic market, achieving a competitive advantage poses significant challenges. Enhancing this advantage requires improvements in organizational structures and management control systems. Most



empirical research examining the relationship between profit efficiency and competitive advantage has focused on both developed and developing countries, including Nigeria (Alhassan & Biekpe, 2016; Brei et al., 2018; Fang et al., 2019; Ologhodo, 2020; Onuoha & Olori, 2017; Pilar et al., 2018; Saeidia et al., 2018; Ventouri, 2018; Zhao & Murinde, 2009). The findings across these studies have been mixed; while some indicate a significant association between competitive advantage and profit efficiency, others found no such correlation. This study aims to fill a gap by analyzing the relationship between competitive advantage and profit efficiency among Nigerian deposit money institutions from 2008 to 2023. The study objectives are to assess the current profit efficiency levels of banks and to evaluate how competitive advantage impacts profit efficiency. Understanding this relationship can assist banks in developing strategies that effectively balance competitive advantages with profit efficiency.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Profit Efficiency

Profit efficiency refers to a business's ability to effectively manage resources and produce goods with higher economic value, accounting for both input and output errors (Ibrahim et al, 2025). It serves as a key metric for assessing overall efficiency and potential profit under optimal conditions, making it a better predictor of performance than traditional financial indicators. By linking higher-value output production with cost reduction (Peteraf & Barney, 2003), profit efficiency provides insights into how organizations use resources and respond to pricing. Arbelo et al. (2021) emphasize that profit efficiency is the most effective measure for evaluating overall performance, as it considers the interplay between operational costs and revenues, aligning with the goal of profit maximization. This economic indicator reveals how efficiently a company operates relative to its potential profit (Han et al., 2012). The literature draws a clear distinction between standard and alternative profit efficiency, rooted in the principles of perfect competition. Standard profit efficiency evaluates how effectively a company maximizes its profit given specific input and output prices (Arbelo et al., 2021). In this context, a business is expected to optimize its input and output levels to reach peak profitability, treating factor prices as constants. The standard profit function can be elegantly represented as:

$$\pi = (p, w) \exp(v_{\pi}) \exp(-u_{\pi}) \dots \dots \dots 1$$

where π = profit, p = price vector of the outputs, w = vector of the inputs, u_{π} denotes the inefficiencies found that reduce profit, and v_{π} stands for random error.



The traditional premise of perfect competition often fails to apply in numerous industries, primarily because firms possess a degree of market power that allows them to influence output prices. In such scenarios, relying on standard profit efficiency estimation is insufficient; instead, alternative profit efficiency presents a more accurate measure. As highlighted by Arbelo et al. (2021), alternative profit efficiency effectively captures how close a company comes to achieving its maximum profit given its output level. This approach recognizes that while the output quantity remains constant, the prices of various outputs can vary, directly affecting the firm's profitability (Berger & Mester, 1997). Thus, we can articulate the alternative profit function as follows:
 $\pi = (y, w) \exp(v_\pi) \exp(-u_\pi) \dots \dots \dots (2)$

where y is the vector of quantities of the variable outputs and the variables are defined as in (1). According to equ= (2), a firm's alternative profit efficiency b (E_π^b) is determined by dividing its current profit by the highest profit it could make if it were absolutely efficient ($u_\pi=0$),

In this context, the variables are defined as specified in (1), with y representing the vector of output quantities. According to equation (2), we can define the alternative profit efficiency of a firm b (E_π^b) as the ratio of the firm's current profit to the maximum profit achievable under perfect efficiency ($u_\pi=0$). The profit made during the current period is the actual performance of the firm based on the current output and level of input. On the contrary, the maximum profit is a utopian standard where all the inefficiencies of operations are done away with. This distinction not only points to the areas of performance improvement, but also shows how companies could be more profitable with the strategic optimization of their operations.

$$E_\pi^b = \frac{\pi^b}{\pi^{max}} = \frac{f(y^b, w^b) \exp(v_\pi^b) \exp(-u_\pi^b)}{(y^b, w^b) \exp(v_\pi^b)} = \exp(-u_\pi^b) \dots \dots \dots (3)$$

Many industries do not adhere to perfect competition since businesses have some market power to set output prices. As a result, standard profit efficiency estimation is not advisable, and alternative profit efficiency is more appropriate. According to Arbelo et al. (2021), this measure assesses how close a business is to profitability at a fixed output level, allowing output prices to fluctuate and affect profit (Berger & Mester, 1997)

2.1.2 Measurement of Profit Efficiency

This study rigorously explores profit efficiency as the key dependent variable, employing the stochastic frontier approach (SFA) for our analysis. According to Fries and Taci (2004), SFA surpasses data envelopment analysis (DEA) in evaluating efficiency, especially in developing countries where measurement errors and economic volatility pose significant challenges. Therefore, this research adopts SFA to assess cost



efficiency specifically within the Nigerian banking sector. We utilize the translog functional form for the cost function, which closely aligns with equation (1), and introduce an additional equation aimed at decomposing the error term into two distinct components. This comprehensive approach not only enhances our understanding of efficiency but also provides valuable insights for policy and strategic decision-making in the banking sector.: $\varepsilon_{it}=v_{it}+u_{it}$3

The error term ε_{it} equals $v_{it}+u_{it}$. The first component, v_{it} represents the random disturbance, which we assume to be normally distributed. This term captures measurement errors and other uncontrollable factors, expressed mathematically as .e. $v_{it} \sim N(0, \sigma_v^2)$. On the other hand, the component u_{it} it encapsulates the technical and allocative inefficiencies that are subject to managerial influence. It is modeled as following a half-normal distribution, indicated by i. e. $u_{it} \sim N^+(u_{it}, \sigma_u^2)$. This distinction is more than just a theoretical nuance: it carries substantial implications for operational efficiency. A higher level of inefficiency translates directly into greater risk for the organization, while lower inefficiency signifies reduced risk. This reality highlights the pivotal role of effective management in minimizing risks and driving performance. By honing in on these inefficiencies, managers can not only enhance operational outcomes but also fortify the organization against potential pitfalls, making efficient management not just advantageous but essential

2.1.3 Competitive Advantage

Ologhodo (2020) highlights that competitive advantage drives economic value addition through the discounted cash-flow technique. Tan (2016) explain competition as either a stable equilibrium where agents view prices parametrically (perfect competition) or a dynamic force that enhances efficiency by aligning prices with marginal costs. Economic value addition hinges on several factors, including revenue, costs, product differentiation, cost of capital, firm size, and growth. Tan (2016) also argue that bank rivalry is a powerful catalyst, compelling institutions to lower costs, reduce managerial complacency, and drive technological innovation. This competition pushes firms to continuously innovate, enhancing product quality and lowering prices to capture market share. However, increased competition raises concerns about banks' risk-taking, leading to the need for both prudential regulation and deregulation. While regulation aims to mitigate excessive risk-taking and reinforce market discipline, it can paradoxically introduce higher costs that may hinder competition. Thus, the interplay between deregulation and prudential regulation can produce conflicting effects on banks' risk behavior and efficiency. Furthermore, research by Allen and Gale (2000) and Zhao and Murinde (2009) shows that in environments with switching costs, large banks with extensive branch



networks can foster a more competitive landscape than microfinance systems. This is because larger banks are motivated to compete for client business rather than exploit their existing “locked-in” value.

2.1.4 Competitive Advantage measured by Lerner index

The Lerner Index is a powerful tool for measuring or assessing a bank's pricing power, calculated by taking the difference between the bank's price and its marginal cost, then dividing by the price. By estimating marginal costs using a translog cost function based on output, and deriving prices from total bank revenue over assets, this index provides critical insights. A high Lerner Index signifies strong market power and reduced competition, with values ranging from 0 to a maximum of 1, indicating exactly how much a bank can elevate its prices above its marginal costs. This measurement is robust and supported by extensive research, including studies by Mirzaei and Moore (2014), Fang et al. (2019), and Carbo-Valverde et al. (2006). The calculation of marginal cost—using a translog cost function that accounts for three outputs and two input prices—ensures a nuanced understanding of economic dynamics in banking. The framework of this cost function is as follows

$$LN\left(\frac{C}{W}\right)_{it} = \delta_0 + \sum_j \delta_{0j} LN Y_{jit} + \frac{1}{2} \sum_j \sum_j \delta_{0jk} LN Y_{jit} LN Y_{kit} + \beta_1 LN\left(\frac{W_1}{W_2}\right)_{it} + \frac{1}{2} \beta_2 LN\left(\frac{W_1}{W_2}\right)_{it} LN\left(\frac{W_1}{W_2}\right)_{it} + \sum_j$$

In the intricate landscape of banking costs, the natural logarithm (LN) serves as a powerful tool for analyzing the total cost function (C) of a bank. This function serves as a cornerstone for understanding a bank's operational efficiency and revenue potential by focusing on four key outputs: total deposits, total loans, noninterest income, and other earning assets (Y). These outputs are vital indicators that reveal the bank's capacity to generate revenue effectively. Additionally, the framework introduces two crucial input prices: W_1 , the price of funds, which is determined by the ratio of interest expenses to total deposits, and W_2 , the price of capital, defined by the ratio of non-interest expenses to fixed assets. This innovative dual input pricing model is particularly impactful as it recognizes that non-interest expenses include critical labor costs, a point emphasized by Hasan & Morton (2000). Embracing this comprehensive approach enables banks to better assess their financial health and strategically enhance their operations.

The parameters δ , β , and θ are crucial components that need to be estimated in this model. The term ε_{it} represents the error term, where i signifies individual banks and t indicates the period under consideration, while j and k denote various outputs. Importantly, the cost of capital encompasses both physical and human capital expenditures. We achieve linear homogeneity by normalizing the dependent variable and W_1 in relation to W_2 . To

effectively calculate the marginal cost of loans, we simply take the first derivative of the dependent variable with respect to output loans, leading us to a significant expression that will guide our analysis

$$:MC_{it} = \left(\frac{C_{it}/W_2}{Y_{it}} \right) (\delta_{j=i} + 2\delta_{it} LNY_{it} + \sum_{k=1} \delta_{ik} LNY_{ikt} + \theta_i LN \left(\frac{W_1}{W_2} \right)) \dots (2)$$

Table 1: summarizes the variables used to measure the Lerner index

Variables	Variable labels	Measurement
Total cost	C	The sum of interest and non-interest costs
Output price	Y	Total loans, securities, and revenue from non-interest
Input price	W	W Input price 1: price of fund percentage of interest charges to total deposits Input price 2: price of capital ratio of other non-interest expenses to fixed assets
Marginal cost	MC	Estimated using equations 3 and 4

Source: Researcher's Concept (2026)

Bank size: This variable serves as a control in the study. Research supports that larger enterprises tend to be more efficient than smaller ones (Pilar et al., 2018). In competitive markets, successful firms thrive while ineffective ones fade away. While some banks with non-family managers may face agency issues (Hiebl, 2017), smaller firms often have greater flexibility and fewer agency problems due to their size. These advantages can lead to higher technical efficiency, offsetting their size disadvantage (Le & Harvie, 2010).

Bank age: The core premise of this theory is that in a highly competitive market, successful companies thrive while inefficient ones stagnate or vanish. Although some studies point out that banks may hire non-family managers, leading to potential agency issues (Hiebl, 2017), smaller businesses tend to be more adaptable, have flatter structures, and avoid agency problems due to their size. These attributes may enable them to achieve greater technical efficiency, effectively compensating for their size disadvantage (Le & Harvie, 2010).



2.2.Theoretical Framework

This study was anchored resource-based view theory because it argues that in a competitive market, successful companies thrive while ineffective ones either stagnate or fail. Although some research suggests that banks hiring non-family managers may face agency issues (Hiebl, 2017), smaller firms are generally more adaptable and maintain flatter structures, reducing such problems. This adaptability enables them to achieve higher technical efficiency, compensating for their size disadvantage (Le & Harvie, 2010). The resource-based view posits that a firm's resources—both in quantity and type determine its diversification strategy. By shifting the focus from market players to a company's resource base, including labor and technology, this perspective highlights barriers to growth, such as limitations in managerial skills and resources that may prevent market entry or successful expansion. It also serves as a framework for analyzing alliances and joint ventures

2.3 Empirical Review

Bamigboye et al. (2022) explored competition's impact on the financial stability of deposit money banks in Nigeria from 2010 to 2019. Using descriptive and inferential statistics, the authors concluded that competition affects financial stability and recommended that bank CEOs embrace financial innovation to enhance competitiveness.

In a separate study, Ologhodo (2020) investigated the effects of corporate restructuring on the competitive advantage of listed commercial banks in Nigeria using data from 2015 to 2018. The analysis revealed a significant growth potential but only a weak positive correlation between competitive advantage and corporate restructuring. The findings emphasized that high trade volume does not guarantee growth or market share, stressing the need for various strategic factors. Managers were encouraged to develop inclusive market strategies.

Brei et al. (2018) examined the impact of bank competition on non-performing loans, an indicator of credit risk, using data from 221 banks across 33 countries between 2000 and 2015. They found a U-shaped relationship between the Lerner Index of competition and credit risk, suggesting that while increased competition can improve efficiency and reduce credit costs, excessive competition may result in lower profit margins and higher risk incentives. Additionally, credit risk was influenced by regulatory frameworks and macroeconomic factors such as growth and financial inclusion.

Following the inferences, Tan (2016) used GMM estimation to investigate the effect of risk and competition on bank profitability, as well as its impact between the



years 2003 and 2011. The authors have highlighted that credit and insolvency risks together with competition in terms of Lerner index did not have statistically significant impact on profitability in Chinese banks.

Alhassan and Biekpe (2016) performed a three-stage empirical study of the impact of competition on cost and profit efficiency in 80 non-life insurance markets in South Africa using firm-level data of the 2007-2012 years. During the initial stage, stochastic frontier analysis (SFA) was used to get cost and profit efficiency scores. The second step was to measure the competitiveness in the market through Panzar-Rosse H-statistic. Lastly a fixed-effects panel regression model was estimated to test the correlation between competition and efficiency scores whilst controlling the firm-level characteristics including size, age, risk exposure, reinsurance, diversification and leverage. The findings showed a relatively small average profit efficiency of 45.71 against an equally high but significantly lower cost efficiency of 80.08 meaning that non-life insurers are good at cost management but find it difficult to realise profit management efficiency. The Panzar H statistic -Rosse indicated that monopoly competitive environment allows companies to make profits, thus empirically supporting the quiet-life theory that increased competition is better at increasing total efficiency. Based on this, the authors suggest the introduction of regulatory policies contributing to the expansion of competition because these steps are necessary to unlock the potential of profits and contribute to the strong development of the sector.

Based on this research, Zhao and Kang (2015) assessed the cost-effectiveness of 18 Chinese banks using the stochastic frontier analysis. Their results showed an observable upward trend in general efficiency in costs, especially in state-owned ones, so the performance gap between them was narrowed considerable in comparison with joint-stock banks.

In a broader context, Mirzaei and Moore (2014) examined bank competitiveness across 146 countries between 1999 and 2011. Their analysis, utilizing the Boone indicator and the Lerner index, demonstrated that a concentrated banking sector undermines competitiveness in developing countries, a trend not seen in advanced economies. They found that inter-industry rivalry and financial independence benefit advanced banking systems, while contestability and institutional development enhance competition in less developed markets. This research underscores the necessity for targeted strategies to improve competitiveness and profitability in global financial institutions.

Tan and Floros (2014) performed a strict examination of the issues of interaction between risk, profitability, and competitiveness in the Chinese commercial banks with specific reference to credit and insolvency risks. Using the Lerner index and Seemingly



Unrelated Regression on the data of 2003-2009, the authors discovered a key finding, that competition has a negative effect on the profitability of the bank, whereas other risk variables seem to have an insignificant effect.

Garcia-Herrero et al. (2009) conducted a significant study on the relationship between efficiency, competition, and profitability in Chinese commercial banks from 1997 to 2004, highlighting the distressingly low profitability in the sector. Their use of a GMM estimator, alongside efficiency measures through the parametric stochastic frontier approach and competition assessed via the Herfindahl-Hirschman Index, revealed that banks with greater efficiency enjoy higher profitability, while competition's impact was minimal.

3.0 Methodology

This study utilized a longitudinal research design to effectively meet its objectives. The target population comprised fourteen (14) listed Banks, from which eleven (11) were strategically selected as the sample size through purposive sampling. Comprehensive data was meticulously extracted from the audited annual financial reports and accounts of these eleven banks spanning the period from 2008 to 2023. The collected data on all relevant variables were rigorously analyzed using descriptive statistics along with the Panel Generalized Method of Moments (GMM), ensuring a robust examination of our findings.

Table 2: Measurement of Variables

Variables	Type of Variable	Variable Labels	Measurement	Expected sign
Profit efficiency	Dependent	PE	Derived from Stochastic frontier analysis (SFA)	
Competitive advantage	Independent	COA	Lerner index	-
Bank size	Control	BSZ	Natural log of total assets	+
Bank age	Control	AGE	The number of years since the firm is listed on the Nigeria Exchange	±

Source: Author's Compilation (2026)

Model Specification

This model was adapted from previous work of (Fang, et al ,2020) which is specified below:



$$PE_{it} = \beta_0 + \beta_1 PE_{it-1} + \beta_2 COA_{it} + \beta_3 BSZ_{it} + \beta_4 BAG_{it} + \varepsilon_{it} \quad (equ. 1)$$

Where COA Competitive advantage will be measured by Lerner index that is defined as the difference between a bank's price and the marginal cost, divided by the price

PE =Profit efficiency measured by input variable and output variables using SFA

Input ; x_1 is the overall cost, which includes both interest and non-interest expenses. x_2 = is the price of funds, which is the ratio of interest expenses to total deposits. x_3 = is the price of capital, which is the ratio of non-interest expenses to fixed assets. Output; y_1 = overall loans; y_2 = Securities; y_3 = Non-interest income

Where;

β_0 , intercepts,

β_1 - β_3 are estimated coefficients

PE_{it-1} stands the lagged dependent variable ; PE = Profit Efficiency

COA = Competitive Advantage; BSZ= Bank size; AGE = Bank age ε = Error terms,

“it” i = firm , t = time

4.0 Results

4.1 Trend of Profit Efficiency Among Nigerian Listed Banks 2008-2024

The analysis of profit efficiency among Nigerian banks, as depicted in Figure 1, reveals an intriguing trend. In 2008, profit efficiency stood at 0.49, followed by a dip to 0.41 in 2009. However, this trajectory changed dramatically, peaking at an impressive 0.56 in 2012. The following years saw sustained improvement, achieving a record efficiency of 0.64 in both 2015 and 2016. This remarkable increase can be attributed to the economic recovery phase that invigorated the banking sector following the previous downturn. Yet, the narrative took a turn as profit efficiency once again peaked in 2018, only to descend to lower levels of 0.57 and 0.55 in 2021 and 2022, respectively. However, In 2024, there was a decline., this may be linked to the rising prominence of wallet banking, which appears to have introduced new challenges.



Profit Efficiency Among Nigerian Listed Banks 2008-2024

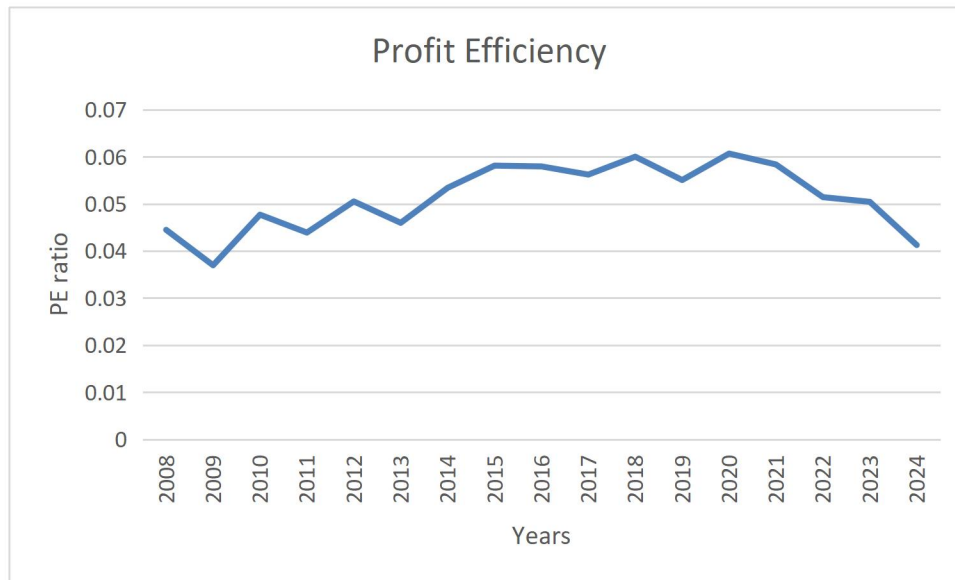


Fig. 1: Trend in Profit Efficiency Among Nigerian Listed Banks

Source: Author's Computation (2026)

4.2 Descriptive Statistics

The results of the descriptive analysis are summarized in Table 3. The average profit efficiency of the listed banks in Nigeria is 0.570 which suggest that Nigerian bank's profit efficiency is slightly above average. Also, the estimated average competitive advantage is 0.414 indicating that 41 per cent of banks have extensive branch networks can provide a more competitive outcome than a microfinance banking. In addition, firm size and age of the firms are on average 21.36 and approximately 26 years respectively. The kurtosis for bank size was high, indicating the presence of significant extreme values for some banks. In contrast, the skewness value is within the typical range of ± 2.656 . The prob of JB of all variables < 0.05 SL, implies that data does not conform to a normal distribution.



Table 3: Descriptive Statistics of Variables

	PE	COA	BSZ	AGE
Mean	0.570	0.414	21.361	26.176
Median	0.555	0.433	21.081	23.000
Maximum	1.000	0.467	26.923	52.000
Minimum	0.027	0.336	6.1000	2.000
Std. Dev.	0.284	0.047	2.4748	14.601
Skewness	0.131	-0.694	-2.6560	0.1940
Kurtosis	1.821	1.775	32.0383	1.7480
Jarque-Bera	11.372	26.719	6789.99	13.385
Probability	0.0033	0.0000	0.0000	0.0012
Sum	106.572	77.424	3994.55	4895.00
Sum Sq. Dev.	15.048	0.415	1139.23	39655.18
Observations	187	187	187	187

Source: Author's Computation (2026)

Note: Variable definitions: PE =Profit efficiency; COA=Competitive Advantage; BSZ= Bank size, AGE= Age

4.3 Correlation Analysis

The analysis presented in Table 4 shows a weak positive and substantial association between profit efficiency and competitive advantage, as indicated by a correlation coefficient of 0.1474. Additionally, the estimated correlation coefficient of -0.2156 demonstrates that bank size is negatively and substantially associated with the profit efficiency of the sampled banks. Furthermore, the results reveal a weak inverse connection between bank age and profit efficiency, as evidenced by the association coefficient of -0.0828, suggesting that experience alone does not guarantee efficiency. Moreover, the findings indicate a weak link among the explanatory variables, given that the correlation coefficients among them are relatively low, with none exceeding 0.5. This suggests that the problem of multicollinearity is unlikely to affect the study's result.



Table 4: Correlation Matrix

	PE	COA	BSZ	AGE
PE	1.0000 -----			
COA	0.1474 0.0440	1.0000 -----		
BSZ	-0.2156 0.0030	0.1305 0.0749	1.0000 -----	
AGE	-0.0828 0.2597	0.1896 0.0093	0.4340 0.0000	1.0000 -----

Source: Author's Computation (2026)

4.4 Panel Generalized Method of Moments

The study's findings, which are displayed in Table 5 revealed that competitive advantage negatively influences, which is substantial at 5% (coeff.= -0.7226; $p < 0.05$), on the profit efficiency of Nigerian listed Banks. This suggests that banks may need to shift focus from merely achieving competitive advantages to enhancing operational efficiencies. This involves making operations more efficient, lowering costs, and providing better customer service, all of which can help improve profit efficiency. Additionally, understanding the implications of competitive advantage may lead banks to reassess their market positioning. It may be necessary to balance competitive pursuits with profitability and sustainability, rather than prioritizing market share alone. On the side of control variables, firm size had a positive and substantial effect on profit efficiency given the estimation (Coeff.= 0.2376; $p < 0.05$) this means that, larger banks may benefit from economies of scale, which can lead to lower costs per unit of service or product offered. This encourages banks to consider growth strategies, such as mergers or acquisitions, to increase their size and enhance profit efficiency. The age of bank (coeff.= -0.0182; $p > 0.05$) had a negative and insubstantial on profit efficiency. This suggests that older firms may not necessarily perform better just due to their longevity. Banks may need to focus more on innovation and adaptability rather than relying solely on their years of operation. The insignificance of firm age might indicate that experience alone does not



guarantee efficiency. The post estimation tests based on third order autoregression AR (1) and Prob (J-statistic) test show that the coefficients of the autogression are not substantial since the probability values are respectively larger than 5 percent. Meaning the residuals are not autocorrelated. The p-value of the Sargan Test (J-stat.) test associates with large probability value. In this regard, the null hypothesis of overidentifying restrictions is valid cannot be rejected. It means all the instruments are valid and the model has good fit for prediction. The p-value for the Wald Tests X^2 was $0.0012 < 0.05$, indicating that the explanatory variables were included in the components that determined the profit efficiency.

Table 5 : Panel Generalized Method of Moments

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Aster
PE(-1)	0.1973	0.2688	0.7339	0.4641	--
COA	-0.7226	0.3414	-2.1166	0.0416	**
BSZ	0.2376	0.1046	2.2716	0.0244	**
AGE	-0.0182	0.0217	-0.8408	0.4017	-
Diagnostic Tests					
Sargan Test (J-stat.)	2.7437				
Prob(J-stat.)	0.9076				
AR (1) Prob-val	2.7437				
Wald Test X^2	0.9506				
Prob(X^2 .)	0.0012				
Instrument rank	11				

P-val<0.01***, P-val<0.05**, P-val<0.10*,

Source: Author's Compilation (2026)

4.6 Discussion of findings

The study examines the effect of competitive advantage on the profit efficiency of Nigerian listed Banks. The results revealed that competitive advantage negatively influence the profit efficiency of Nigerian listed Banks. By implication, this finding might encourage banks to focus on innovation and differentiation as sources of competitive advantage instead of solely competing on price or volume, which may not necessarily translate to better profit efficiency. In addition, banks may need to shift focus from merely achieving competitive advantages to enhancing operational efficiencies. This involves making operations more efficient, lowering costs, and providing better



customer service, all of which can help profit efficiency. The findings support Tan and Floros (2014), who noted a negative impact of competition on bank profitability. Similarly, Bamigboye et al. (2022) found a negative relationship between competition and financial stability in Nigerian banks. In contrast, Alhassan and Biekpe (2016) reported a positive effect of competition on cost and profit efficiency, highlighting the complexity of the competition-performance relationship in banking. Additionally, firm size positively impacted profit efficiency, suggesting that larger banks have more market power to negotiate better terms with suppliers. This can lead to enhanced profitability, prompting smaller banks to assess their competitive strategies and consider partnerships or collaboration. The age of bank had a negative and insubstantial on profit efficiency. By implication, this finding may prompt banks to prioritize innovation over tradition. Established banks could benefit from fostering a culture of innovation and actively seeking new ideas and technologies, rather than adhering to established practices that may no longer be effective.

5.0 Conclusion and Recommendations

The study concluded that banks may need to implement stronger risk management practices to ensure that their competitive strategies do not expose them to financial risks that could further deteriorate profit efficiency. The study advises banks to reevaluate their competitive strategies. If competitive advantages are reducing profit efficiency, traditional approaches like aggressive pricing and market share expansion may need reconsideration. Banks should redirect resources and investments to areas that enhance overall performance. This study adds value to existing literature by employing a stochastic frontier approach (SFA) estimation technique, which enhances the reliability of results concerning profit efficiency. This methodology substantially enriches the banking literature as a whole. Additionally, the study expands our understanding of how these relationships can assist banks in developing more effective strategies that align competitive advantages with profit efficiency over the long term. This study is limited to listed DMBs and ignores other financial sectors such as insurance companies and non-financial sectors. Further studies should focus on insurance companies and other non-financial sectors



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