

EVALUATION OF FINANCIAL HEALTH OF NIGERIAN DEPOSIT MONEY BANKS: AN APPLICATION OF BANKOMETER MODEL

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Abstract

This study investigated the financial soundness of Nigerian Deposit Money Banks (DMBs) over ten years (2011-2020), using the bankometer model and compared the financial health of banks categorised as systemically important (DSIBs) with others considered non-systemically important (D-NSIB) using the bankometer model, the financial standing of banks classified as nonsystemically important (DNSIBs) and those classified as systemically important (DSIBs) were compared. The study used secondary data from the websites of purposively selected six (6) DSIBs and six (6) D-NSIBs, listed on the Nigeria Exchange Group on 13 May 2021. The performance indicator is measured by each bank's soundness was indicated by its bankometer solvency score (S-score while the six bankometer parameters, namely- Capital to assets ratio, Equity to assets ratio, Capital adequacy ratio, non-performing loans ratio, cost-to-income ratio and loans to assets ratio, were employed as explanatory variables. The study found both categories of banks in Nigeria financially healthy in the category of 'Super Sound', during the study period and an independent sample t-test conducted showed no significant difference ($p = 0.075; > 0.05$) between the financial health of the two groups. Therefore, the study suggested that Nigerian regulators' oversight efforts be balanced between the two groups and that they refrain from overly enhancing one group's supervision at the expense of another.

KEYWORDS: Bankometer Model, Financial Health, Solvency Scores, Super Sound, Systemically Important Banks,

1. Introduction

The banking system is a very old institution that plays a vital role in the growth of any economy and is regarded as a major service sector in the contemporary world. Onyenwe (2019) and Olukotun et al (2013) also noted that Nigerian banks have not yet reached their full potential, even though every other economic sector depends on the banking industry. Nigerian banks have passed through various evolutionary stages, starting from the advent of the first banking institution dated back to 1892 to the days of bank consolidation and recapitalization (Onyenwe, 2019; Ebiringa, 2011). Within this period, many of the banks were found to have been confronted with one challenge or the other (Aliyu et al., 2020; Osuma et al., 2021; Babajide et al., 2013). Several types of research, including those by Banerjee and Malik (2022), Onyenwe (2019), and Ini and Eze (2018), among others, have found that insufficient working capital, weak record-keeping, inexperienced management and inadequate accounting systems are common.

The Nigerian banking sector has a long history of experiencing distress which has had a significant impact on the country's economy. Additionally, this has caused depositors to lose faith in the sector which has slowed down the rate at which money is being created for investment. According to Onyenwe (2019) and Ebiringa (2011), bank distress is not an accident and does not occur in a day as it is rather organic as well as systemic. However, distress among banks can be predicted ahead of time based on the identification of the early warning signals, which can be deployed and used as a framework to sustain such a bank, its management and regulatory authorities to take decisive actions and make decisions to curb the problem from further developing. Growing non-performing loan portfolios and a persistent decline in profitability per asset are two examples of early warning signs of trouble. (Odewole & Salawu, 2016; Kostyuk, 2011).

In Nigeria and worldwide, bank distress has become a recurring challenge despite the various reforms, tightening regulations, and legal and supervisory frameworks (Nwude & Okeke, 2018; Gombo & Zoromedza, 2016; Chen et al., 2014; Babajide et al., 2013). However, bank failures are not uncommon, nor peculiar to developed or developing economies or a particular geographical region (Jaabi, 2017). As noted (Adegbie & Dada, 2018), bank failures are more damaging compared to another corporate failures since they have the potential to generate financial distress on a national or international scale and undermine economic growth.

The financial position of banks is highly strategic as some banks are also considered systemically important in the banking sector because of their size, interconnectedness, complexity, non-substitutability and global reach. Such large banks are tracked and labelled by several regulatory authorities like the Central Bank of Nigeria (CBN) as Systemically Important Financial Institutions (SIFIs) depending on the scale and the degree of influence they hold in global and domestic financial markets. Consequently, evaluating bank operations and establishing their financial soundness and health has become a top priority for global regulators.

The primary objective of this study is to evaluate the financial health of selected Nigerian deposit money banks (DMBs) over the ten years, 2011 to 2020 using the bankometer model. The specific objective of the paper, therefore, is to examine the financial health of Nigerian Domestic Systemically Important Banks (D-SIBs) and other Non-Systemically Important Banks (D-NSIBs) and determine significant differences between the financial health of Nigerian D-SIBs and D-NSIBs based on their bankometer solvency scores during the study period. The study outcome is expected to assist the regulatory authorities in their oversight functions and provide an open score-card of concerned banks' internal management to mirror their financial performance against future operating periods. Consequently, the following hypothesis guides the study:

H0₁: There is no significant difference between the financial health of Nigerian D-SIBs and D-NSIBs based on their bankometer solvency scores (S-scores) during the study period.

2.0 Literature Review

2.1 Conceptual Review

Systemically Important Banks and Non-systemically Important Banks

Systemically important banks and non-systemically important banks are distinctions made within the banking sector based on their potential impact on the broader financial system.

Systemically Important Banks (SIBs): These are banks according to Knot & van Voorden (2013) whose failure or distress could potentially trigger a financial crisis or significant disruption in the financial system. They are often large, interconnected, and highly interconnected with other financial institutions. SIBs usually have significant cross-border activities and are considered "too big to fail" by regulators. Their failure could lead to a domino effect, causing other financial institutions to fail and potentially triggering a broader economic downturn. Regulators subject SIBs to stricter oversight, capital requirements, and stress testing to mitigate systemic risks. Identification of SIBs varies across jurisdictions, but they are typically identified based on criteria such as size, interconnectedness, complexity, and substitutability.

Non-systemically Important Banks: These banks according to Li (2023) and Elliott & Litan (2011) are those banks whose failure, while significant for their stakeholders, would not pose a systemic risk to the financial system. They are generally smaller in size, have fewer interconnections with other financial institutions, and operate in more localized markets. Non-systemically important banks may still be subject to regulatory requirements and oversight but to a lesser extent compared to SIBs. Their failure is less likely to have a cascading effect on the broader financial system, although it could still have localized or sector-specific impacts. While non-systemically important banks may not be subject to the same level of regulatory scrutiny as SIBs, they still play a crucial role in providing financial services to their communities and supporting economic activity at the local level.

Ak, Dechow et. al (2013), Beaver (1966) and Certo, et. al. (2020) discussed the following indicators that define both dependent and independent variables of this study which were used to form the model used in equation 2.

Solvency Score - The solvency score is a measure of a company's ability to meet its long-term financial obligations. It assesses the overall financial health and stability of the organization. It typically considers factors such as total assets, liabilities, and equity to evaluate whether the company has sufficient resources to cover its debts over the long term. A higher solvency score indicates greater financial stability and a lower risk of default.

Capital to Assets Ratio - The capital to assets ratio measures the proportion of a bank's capital (equity and reserves) to its total assets. It indicates the extent to which a bank's assets are funded by its capital rather than by debt. A higher capital-to-assets ratio suggests that the bank has a stronger financial position and is better able to absorb losses.

Equity to Assets Ratio - The equity to assets ratio evaluates the proportion of a company's total assets that are financed by shareholders' equity. It reflects the degree of leverage or financial risk in the company's capital structure. A higher equity-to-assets ratio indicates a lower reliance on debt financing and a stronger financial position.

Capital Adequacy Ratio - The capital adequacy ratio is a regulatory measure that assesses a bank's capital about its risk-weighted assets. It ensures that banks maintain sufficient capital to cover potential losses arising from their lending and investment activities. Regulators set minimum capital adequacy ratios to ensure the stability and solvency of banks.

Nonperforming Loans (NPL) Ratio - The nonperforming loans ratio measures the proportion of a bank's loans that are in default or are not generating income due to delinquency. It indicates the quality of a bank's loan portfolio and its ability to manage credit risk. A higher NPL ratio suggests a higher level of credit risk and potential losses for the bank.

Cost-to-Income Ratio - The cost-to-income ratio evaluates a bank's operating efficiency by comparing its operating expenses to its operating income. It indicates how much a bank spends to generate revenue. A lower cost-to-income ratio suggests higher efficiency and profitability.

Loans to Assets Ratio - The loans to assets ratio measures the proportion of a bank's assets that are held in the form of loans. It assesses the bank's lending activities relative to its total assets. A higher loans-to-assets ratio may indicate a higher risk profile if the loans are not adequately diversified or if credit risk is not well managed.

2.2 Theoretical Review

Systemic Risk Theory

Systemic Risk Theory according to Hansen (2013) and Bisias, et. al (2012) serves as a cornerstone for understanding the vulnerabilities inherent in financial systems and the potential for cascading failures. By highlighting the interconnectedness and interdependence of financial institutions and markets, this theory underscores the importance of comprehensive risk management and regulatory oversight. One of the strengths of Systemic Risk Theory is its ability to provide a framework for identifying and assessing systemic vulnerabilities. By analyzing the various channels through which risks can propagate, regulators can develop targeted interventions to mitigate the likelihood and severity of systemic crises. Stress testing, for example, allows regulators to simulate adverse scenarios and evaluate the resilience of financial institutions to shocks, thereby enhancing the overall stability of the system. However, Systemic Risk Theory also faces some criticisms. Critics argue that while the theory acknowledges the complexity of financial networks, it may oversimplify the dynamics of systemic risk. Financial systems are dynamic and adaptive, with risks evolving in response to changing market conditions and regulatory measures. As such, there is a need for ongoing research and refinement of systemic risk models to capture the nuances of real-world dynamics more accurately.

Too Big to Fail (TBTF) Theory

The Too Big to Fail (TBTF) Theory was discussed by Omarova (2018) and Strahan (2013) and shed light on the systemic risks posed by large and interconnected financial institutions. By recognizing that the failure of certain institutions could have catastrophic consequences for the broader economy, this theory underscores the importance of regulatory measures to mitigate moral hazard and ensure financial stability. One of the key insights of TBTF Theory is its recognition of the implicit government support enjoyed by systemically important institutions. This acknowledgement has prompted policymakers to implement measures aimed at reducing the likelihood of bailouts and enhancing the resilience of these institutions. For example, the implementation of resolution frameworks, such as living wills, seeks to facilitate the orderly wind-down of failing institutions without resorting to taxpayer-funded bailouts.

However, TBTF Theory also faces criticism on several fronts. Critics argue that despite regulatory efforts, the perception of implicit government support persists, leading to moral hazard and excessive risk-taking by TBTF institutions. Moreover, the concentration of assets and activities within these institutions may exacerbate systemic risks, as their failure could lead to a loss of market confidence and contagion across the financial system.

2.3 Empirical Review

Shar et al. (2010) came up with the Bankometer model following the suggestions of the International Monetary Fund (IMF) as a fallout of the world financial crisis of 2008-2009 in a bid to establish a model that used a minimum number of parameters and yet produced maximum accuracy in results (IMF, 2000). The objective of this initiative was to develop a scale which could measure the vulnerability of a financial institution better than the existing conventional models, such as CAMEL(S) and the Credit Leona's Securities Asia Stress test (CLSA-stress test) and other models (Shar et al., 2010). Though, this was from another country but adapted to the Nigerian banking industry. Differently, this study groups the selected banks into systemically important banks and non-systemically important banks which were not done in this study. Onyema et al. (2018) examined the financial soundness of ten Nigerian commercial banks for sixteen years -2000-2015, using the Bankometer S-score model. The study chose this model in preference to other models like CAMELS and the CLSA-Stress test because the bankometer model was 'new and effective'. Only two (2) of the banks were found to have exceeded the 70 per cent threshold and were rated financially 'super sound' while the remaining eight (8) banks had solvency scores below 50 per cent ($S < 50$) indicating that these were experiencing financial difficulties and high risk. From a Friedman rank test, significant differences in solvency scores were also established among the banks. The study therefore concluded that internal management could use the model to determine the solvency problems and obviate any effect of inefficiency in their operations. Also, this study groups the selected banks into systemically important banks and non-systemically important banks whereas, it was not done in this study.

Rahman (2017) examined the financial soundness of twenty-four private commercial banks operating in Bangladesh. Rather than using other models like the CAMELS framework or CLSA-Stress test, a new effective model has been used in this study named "Bankometer". This model has been developed according to the guidelines of IMF (2000) for measuring the soundness of banks and used by many researchers for its simplicity. Using this model, the soundness of selected banks has been measured for the year 2015 and again consistency of the soundness of these banks has been evaluated for a long period covering (2010-2015). The study reveals that all the banks have ensured sound financial status individually and the banking industry has always been in a favourable position during the period (2010-2015). Finally, this study concludes that the "Bankometer" model will help the internal management of any bank in determining insolvency issues and removing the shortcomings generated by inefficiency in banking operations

Budiman et al. (2017) assessed the financial distress status of 11 Islamic banks, listed and non-listed, purposively selected in Indonesia during the five (5) year period, 2011-2015 and found that all the 11 Islamic banks were rated very healthy throughout the study period. In a comparative study of the financial soundness of five (5) conventional and five (5) Islamic commercial banks in Bangladesh, using the bankometer model approach,

Rana and Kamruzzaman (2021) found all the conventional and Islamic banks 'super sound' financially during the study period, 2010 to 2019. The study concluded that the bankometer model was significantly better for conventional banks than the Islamic banks. In the same manner, this study groups the selected banks into systemically important banks and non-systemically important banks which were not done differently to this study. Several other studies, such as Abirami (2018), Bolat (2017), Bella and Radianto (2020), and Abdurraheem (2020). Ouma and Kirori (2019), also deployed the bankometer model to analyse the financial soundness of banks in countries like India, Kazakhstan, Indonesia, and Nigeria and they asserted that the model reflected the reality of the day while others concluded that the model complements the Altman's Score model. The consensus among previous scholars who had experimented with the bankometer model, to either assess financial health and performance or simply in distress prediction of banks or non-bank financial institutions, appears to suggest that the bankometer model is both good and effective. Still, there were other studies with mixed results that did not completely align with the results of comparable models when used on the same data sets (Abdurraheem, 2020). This study will provide further evidence of the model's applicability for further research used by other scholars. Equally, this study did not group the selected banks into systemically important banks and non-systemically important banks as done in this study. Yusuf & Tijani (2019) evaluated the financial health of Deposit Money Banks (DMBs) in Nigeria using the CAMELS Rating Model based on three characteristics. Using ex-post facto research design, secondary data which covers the years 2010 to 2017 were collected from the annual reports of the selected listed DMBs. Guided by three research objectives, the study formulates and tests three hypotheses. Mean and independent sample t-tests were employed to present and analyse the data. The paper, inter alia, provided evidence of a statistically significant difference between the financial health of Domestic-Systemically Important and Domestic Non-Systemically Important DMBs in Nigeria ($t_{cal}(10) = 2.832 > t_{tab} = 2.228$; $p\text{-value} = 0.018$). Based on these findings, the paper concluded that the financial health of DMBs does not differ based on the type of operating licence they hold and the structure they operate. However, the methods used in this study are different and also differentiating the selected banks into study groups the selected banks into systemically important banks and non-systemically important banks was an added gap.

2.1 Conceptual Framework

Figure 1 presents the conceptual framework of the inter-relationship among the variables used in the study. The financial soundness (Solvency scores) of the banks represents the dependent variable while the six (6) bankometer parameters stand for the explanatory variables.

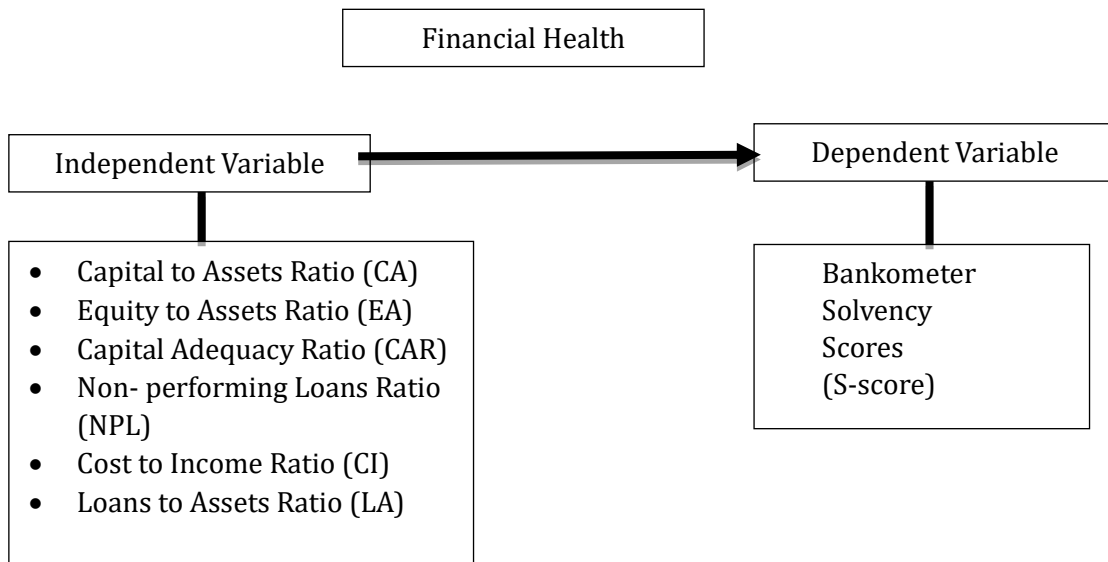


Fig 1: Conceptual Framework
Source: Adapted from Ouma and Kirori (2019)

3.0 Methodology

3.1 Research Design

The study employed secondary data from the publicly available annual reports and accounts of selected banks that were accessible on their websites; utilizing an *ex-post facto* research design. This design has been adopted for this study which used secondary data obtained from the published annual reports and accounts of sampled banks that were available on their websites. The study population comprises the entire twenty-one (21) DMBs operating in the Nigerian banking sector as of May 13, 2021. Twelve (12) banks were purposively selected based on asset size. Merchant banks as well as the financial Holding Companies were not captured by the study. The DMBs' financial health was evaluated using the bankometer S-score model and the independent t-test was performed to look at any discrepancies in their health statuses,

3.2 Model specification

The CAMELS framework and CLSA-Stress test parameters were very familiar models used in analyzing banks' financial soundness in the past. This study has adopted the Bankometer model which has lately been developed by Shar et al. (2010) on the recommendation of the IMF because the model has the advantages of comprehensiveness, simplicity, accuracy and fewer parameters (Abirami, 2018).

The model as recommended by Shar et al. (2010) is expressed thus:

$$S = f (CA + EA + CAR + NPL + CI + LA) \dots\dots\dots 1$$

$$S = 1.5CA + 1.2EA + 3.5CAR + 0.6NPL + 0.3CI + 0.4LA \dots\dots\dots 2$$

Where:

S = S-Score (the overall solvency score - determinant of the level of financial health); CA = Capital to Assets ratio; EA = Equity to Assets ratio; CAR = Capital Adequacy ratio; NPL = Nonperforming Loans ratio; CI = Cost to Income ratio and LA = Loans to Assets ratio.

Bankometer Parameters' thresholds:

- CA Ratio = higher than or equal to 4% ($CA \geq 4\%$)
- EA Ratio = Greater than or equal to 2% ($EA \geq 2\%$)
- CAR Ratio = Between 8% and 40% ($40\% \leq CAR \leq 8\%$)
- NPL Ratio = Below or equal to 15% ($\leq 15\%$)
- CI Ratio = Less than or equal to 40% ($\leq 40\%$)
- LA Ratio = Less than or equal to 65% ($\leq 65\%$)

A bank with an overall S-score of over 70 per cent is classified as 'super sound', indicating that the bank is adequately solvent and financially healthy without any worrisome difficulties and has no supervisory concern. Any bank with an S-score of less than 50 per cent is deemed to have critical financial weaknesses and possesses a high risk of bankruptcy. However, where a bank has an S-score of between 50 to 70 per cent, it is classified as operating in the 'grey' zone implying that it has financial problems with equal probability of failure and only internal management actions can ensure its survival.

4.0 Results and Discussions

Table 1 presents the Bankometer Solvency scores (S-scores) for the D-SIBs. The results show that none of the D-SIBs had a score below the 70 per cent benchmark for the 'super sound' level of financial performance. This is an indication that all the D-SIBs were financially sound all through the study period and were not experiencing any semblance of distress. Zenith Bank had the highest mean score of 164.22 per cent, followed by Guaranty Trust Bank at 151.15 per cent and the least is Ecobank with 130.60 per cent. The S-scores of the banks declined during the last two financial years (2019 and 2020), presumably due to the effect of the COVID-19 pandemic that ravaged all countries of the world and their economies.

Table 1 Bankometer S-scores (Financial Health) of Domestic Systematically Important Banks (D-SIBs)

$S = 1.5X_1 + 1.2X_2 + 3.5X_3 + 0.6X_4 + 0.3X_5 + 0.4X_6$												
Banks	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Bank average	Classification
	%	%	%	%	%	%	%	%	%	%	%	
ZENITH	219.06	185.27	168.33	145.45	150.26	156.11	165.27	154.22	152.53	145.72	164.22	Super Sound
GTCO	144.77	161.76	152.43	149.11	139.56	141.60	170.42	156.93	153.96	140.96	151.15	Super Sound
ACCESS	146.39	153.57	137.64	141.80	146.28	149.67	152.49	138.41	134.49	132.40	143.31	Super Sound
FBN	161.08	149.37	135.04	137.99	161.27	156.22	150.47	102.55	121.26	118.67	139.39	Super Sound
UBA	148.18	141.46	127.17	124.77	134.50	132.77	137.87	144.58	146.22	133.56	137.11	Super Sound
EcoBank	133.56	144.12	131.49	148.81	152.26	166.69	109.24	113.93	103.86	102.02	130.60	Super Sound
Cohort Average	158.84	155.93	142.02	141.32	147.36	150.51	147.63	135.10	135.39	128.89		

Source Researcher’s Computation, 2024

The S-scores for the Domestic Non-systemically Important Banks (D-NSIBs) during the same period are contained in Table 2. None of the D-NSIBs has an average S-score of less than the prescribed limit of 70 per cent for ‘super sound’ banks. This result indicates that this category of banks was also financially sound during the period of investigation and did not show signs of vulnerability. Fidelity Bank, out of the D-NSIBs group, has the highest mean S-score of 156.39 per cent, a score that is higher than some of those classified as systemically important banks. This is followed by FCMB Bank with an average s-score of 149.01 per cent. The lowest score performer within this group is WEMA Bank (95.59) which is slightly above the threshold of 70 per cent. A further examination of the financial soundness of this bank throughout the study shows that it

has a history of abysmal performance during the years 2011 and 2012 and only attained the 'super sound' financial health status from year 2013 to 2020. This might be because of the adoption of International Financial Reporting Standards (IFRSs) by Nigerian banks from 2012 that impacted their financial statements.

Table 2 Bankometer S-scores (Financial Health) of Domestic Non-Systematically Important Banks (D-NSIBs) -2011-2020

$S = 1.5X_1 + 1.2X_2 + 3.5X_3 + 0.6X_4 + 0.3X_5 + 0.4X_6$												
Banks	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Bank average	Classification
	%	%	%	%	%	%	%	%	%	%	%	
FIDELITY	195.58	188.05	163.21	173.05	154.07	148.98	139.43	133.25	137.96	130.29	156.39	Super Sound
FCMB	203.44	158.24	140.92	147.52	144.55	147.87	149.88	137.02	135.61	125.02	149.01	Super Sound
STBC	157.43	152.18	137.39	145.06	150.85	141.10	136.48	139.32	158.59	152.28	147.07	Super Sound
UNION	180.79	160.87	159.77	79.58	137.35	125.14	124.67	131.01	119.94	118.66	133.78	Super Sound
STERLING	120.61	117.04	113.57	117.16	133.99	116.24	127.41	123.99	126.27	137.07	123.34	Super Sound
WEMA	9.31	(3.45)	113.90	128.15	122.67	110.22	124.42	136.35	107.19	107.15	95.59	Super Sound
Cohort Average	144.53	128.82	138.13	131.75	140.58	131.59	133.72	133.49	130.99	128.41	134.20	

Source Researcher's Computation, 2024

Table 3 shows the descriptive statistics of the S-scores of all selected banks (D-SIBs and D-NSIBs) during the study period. From this Table, it is observed that the mean bankometer scores of both D-SIBs and D-NSIBs are 144.30 per cent and 128.41 per cent with standard deviations of 11.90 and 15.54 respectively, implying that both categories of banks are financially sound as their average scores exceeded the 70 per cent limit. However, the D-SIBs outperformed the non-systemically important banks, based on their respective solvency scores during the period of examination.

Considering the banks' specific parameter scores, Table 3 also shows that the mean capital-to-assets ratio (CA) of the D-SIBs is 11.68 per cent with a standard deviation (s.d) of 2.88, which is a little higher than that of the D-NSIBs (10.45; s.d 3.76). The CA shows the proportion of total assets that were financed from the total capital employed (equity and long-term debt) by the bank. It is a measure of whether or not the bank has sufficient capital to support its assets. A high CA implies that the bank is goodly leveraged and is less vulnerable. This result is evidence that D-SIBs are better capitalized than the D-NSIBs. However, the equity to assets ratio of the D-SIBs (12.53%; s.d. 3.63) is lower than that of the D-NSIBs (13.30; s.d. 3.63), thus indicating that the D-NSIBs are less leveraged and have a larger percentage of their assets contributed by the banks and their investors and are less dependent on external financing. Nonetheless, both groups satisfy the bankometer requirement of equity to assets ratio (EA) of more than or equal to 2% ($EA \geq 2\%$).

Table 3: Group Statistics: A Comparison of Financial Health of D-SIBs and D-NSIBs

		Bank Systematic Importance	N	Mean	Standard deviation	Standard Error Mean
1.	Bankometer S-score	D-SIBs	6	144.30	11.90	4.859
		D-NSIBs	6	128.41	15.536	6.343
2.	Capital to Assets (CA)	D-SIBs	6	11.68	2.876	1.174
		D-NSIBs	6	10.45	3.759	1.535
3.	Equity to Assets (EA)	D-SIBs	6	12.53	2.798	1.142
		D-NSIBs	6	13.30	3.631	1.482
4.	Capital Adequacy Ratio (CAR)	D-SIBs	6	20.39	2.656	1.084
		D-NSIBs	6	16.81	4.725	1.929
5.	Nonperforming loans (NPLs)	D-SIBs	6	5.59	2.805	1.145
		D-NSIBs	6	5.75	2.016	0.823
6.	Cost to Income (CI)	D-SIBs	6	60.09	13.567	5.539
		D-NSIBs	6	76.75	10.197	4.163
7.	Loans to Assets (LA)	D-SIBs	6	44.19	3.588	1.465
		D-NSIBs	6	43.78	6.978	2.849

Source: Researcher's Computations, 2024

Another supervisory determinant of the systemic importance of banks in Nigeria is the capital adequacy ratio (CAR). By regulatory standards, D-SIBs are expected to have a minimum CAR of 15% while D-NSIBs should have a minimum CAR of 10%. As expected, the mean CAR of the D-SIBs (20.39; s.d. 2.66) is higher than that of the D-NSIBs group (16.81; s.d. 4.73). The CAR represents a bank's capital (Tier 1 and Tier 2) about its risk-weighted assets (RWA). An adequate CAR is an indication that a financial institution is reasonably safe and can meet its maturing obligations and absorb consequential losses. The results mean that the systemically important banks are more resilient in the face of any adverse trading results and are more able to absorb losses than the non-systemically important banks. Notwithstanding, the two groups have met the local regulatory standard of 15% / 10% as well as the bankometer threshold of a CAR of 8% to 40%.

Again, the nonperforming loans ratios (NPL) of both groups are on average alike- D-SIBs (5.59; s.d. 2.81) and D-NSIBs (5.75; s.d. 2.82). This result implies that both groups of banks attained a similar pattern in controlling their nonproductive loans and advances. Though the systemically important banks with a lower NPL of 5.59 per cent are marginally more efficient in this regard than the D-NSIBs, yet, all the banks passed the Bankometer standard of NPL of less than or equal to 15%, making them financially sound, stable and efficient in managing their risk assets.

Table 3 also revealed that the cost-to-income ratio (CI) of the D-NSIBs (76.75%; s.d. 10.20) is much higher than that of the D-SIBs (60.09; s.d. 13.57). This result implies that the systemically important group of banks enjoys lower operating costs than the D-NSIBs due to the effect of the economies of scale theory which postulated that larger banks because of their size can always be favoured by economies of scale advantage to produce their services at a lower cost per naira (N). The effect is for the D-SIBs to achieve greater profit margins and are thus expected to have higher S-scores in the end. This result appears to lend credence to the assertion of this theory.

As for the loans to assets ratio (LA), the result as shown in Table 3, is that the non-systemically important banks have a lower average ratio (43.78; s.d. 6.98) than the systemically important banks (44.19; s.d. 3.59). This suggests that the D-SIBs were marginally able, during the study period, to give out more loans and advances from their customer deposits than the D-NSIBs. Though the higher loan output may mean more expected interest earnings for the D-SIBs, possibly translating into greater realised profit, it may also open them to higher default risks and low liquidity.

4.1 Test of hypothesis

The study hypothesis states that "there is no significant difference between the financial health of Nigerian D-SIBs and D-NSIBs based on their bankometer solvency scores during the study period". The independent samples t-test results (Table 4) show that all the parameters (CA, EA, CAR, NPL, CI, LA) do not present any difference between systemically and non-systemically important banks as the Levene's test for homogeneity of variances p-values are > 0.5 and so the Equal Variances assumed is chosen. In this wise, the null hypothesis of equality of variances is not rejected. However, the t-test for equality of means also shows p-values > 0.05 except for statistically significant parameter CI (t = -2.404; p = 0.037; < 0.05). Therefore, we do not reject the null

hypothesis that there is no significant difference between the financial soundness of Nigerian D-SIBs and D-NSIBs during the study period. Thus, this study concluded that the financial soundness of Domestic Systemically Important Banks (D-SIBs) is not better than that of Domestic Non-systemically Important Banks (D-NSIBs) as it is statistically non-significant. This result is however at variance with the findings in Yusuf and Tijani (2019) which concluded that the financial health and performance of Nigerian DMBs differ during the period 2010 to 2017 based on whether or not they are systemically important.

Table 4: Independent Samples Test of Difference in Financial Health of D-SIBs and D-NSIBs

	Variable	Levene's Test for Equality of Variances		Equal Variances Assumed/ Equal Variances Not Assumed	t-test for Equality of Means	
		F-test	Sig.		t	Sig. (2tailed)
1.	CA	0.777	0.399	Equal Variances Assumed	0.640	0.537
2.	EA	0.166	0.692	Equal Variances Assumed	-0.411	0.689
3.	CAR	2.170	0.171	Equal Variances Assumed	1.619	0.137
4.	NPL	1.251	0.290	Equal Variances Assumed	-0.113	0.912
5.	CI	0.391	0.546	Equal Variances Assumed	-2.404	0.037
6.	LA	4.496	0.060	Equal Variances Assumed	0.130	0.899
7.	Bankometer S-Score	0.299	0.596	Equal Variances Assumed	1.988	0.075

Source: Researcher's Computations, 2024

5. Conclusion

This study has examined the financial health of Nigerian DMBs during the period 2011 to 2020, using the Bankometer S-Score model and concluded that all Domestic Systemically and Non-Systemically Important Banks in Nigeria were financially super

sound over the period investigated. Among all sampled banks, Zenith Bank (a D-SIB) had the highest average S-Score of 164.22 per cent and was topmost in rank. Next, is Fidelity Bank (a D-NSIB) with an average S-score of 156.39 per cent and the Guaranty Trust Bank (a D-SIB) is in the third position with a mean S-score of 151.15 per cent respectively. The independent sample t-test result shows that the financial soundness of DMBs in Nigeria measured by the Bankometer model is not significantly better than between D-SIBs and D-NSIBs throughout the study. The study therefore recommends that the CBN / NDIC oversight efforts should be balanced between D-SIBs and D-NSIBs for effective and all-encompassing supervision. All DMBs should be accorded similar supervisory attention at all times to ensure the optimum performance of all banks in the sector.

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