

# **THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT**

## **Predicting Sustainable Bank Performance in Nigeria Using Composite Financial Index**

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**Abstract:**

This study seeks to predict sustainable Bank performance in Nigeria using Composite Financial Index. Composite Financial Index (CFI) is a single indicator of overall institutional financial health based on performance in four principal domains of finance; sufficiency and flexibility of financial resources, management of debt, the performance of assets, and results from operations. Each domain is measured by a core financial ratio. The main objective of the study was to find out the level of banks' performance in Nigeria using Composite Financial Index. The study adopted Market Power Theory and the Efficiency Structure Hypothesis. The paper specified various ways to achieve its objectives, such that objective one was achieved by compiling all the variables that make up the CFI, and all these variables would be identified and compared with the contents of financial reports of the banks. The paper in its finding shows some weaknesses in the application of individual financial ratios in measuring performance and predicted that Composite Financial Index would better explain the true performance level of a bank rather than an individual financial ratio. The paper recommends that Nigeria banks should adopt the use of CFI in measuring performance and Analysts who desire to use the conventional ratio analysis should also apply the CFI as a further confirmation of the results of the conventional ratio analysis so that the public and Nigeria banks would not experience what happened in the sector in 2009.

**Keywords:** Sustainability, bank performance, and composite financial index

### 1. Introduction

Banking institutions consist of commercial banks, savings and loan associations, savings banks, Merchant banks, agriculture banks, microfinance banks, and credit unions. The main disparities flanked by these varieties of banks reflect in what way they are owned and how the assets and liabilities of such institutions are being managed (CBN, 2018). Assets of a bank are characteristically classified into cash, loans, securities (bonds but not stocks), and property in which the bank has invested while liabilities are predominantly the deposits accepted from the bank's customers (Evans, 2017). There are identified as liabilities since they are owned by and can be withdrawn by the depositors of the financial institutions.

Conventionally, banks are in business primarily to make a profit. However, whether the ability of a bank to make and declare profits, represents a measure of sustainable financial performance has remained a matter of debate. This debate is reawakened by the persistent instability in the banking industry in Nigeria and the repeated situations where banks that publicly pose themselves as being profitable are sometimes victims of technical insolvency. In Nigeria, was the situation with the defunct Oceanic Bank Plc, Afribank Plc. Intercontinental Bank plc, Spring Bank Plc, and Bank PHB plc (CBN, 2011). All these banks were tested to be strong using the traditional method of testing bank profitability. Yet, there were seriously sick.

Meanwhile, profitability appears to be more pronounced in the banking industry, the concept itself does not always guarantee sustainable financial performance. Whereas, profitability represents a measure of a single accounting figure and sustainable financial performance represents a Composite Financial Index (CFI). Sustainability is a way an institution creates value for its shareholders and society by maximizing the positive and minimizing the negative effects of environmental, political, social, and economic issues (CIMA, 2011).

The concept of performance involves a process of carrying into the implementation of detailed pursuits or the accomplishment of a given task measured against preset known standards of correctness, completeness, cost, and speed

(Business Dictionary 2014). Bank performance in this regard is a replication of the method in which the resources of a bank are being used in a form that permits it to attain its objective (Rengasany, 2012). Financial indices are functional indicators to measuring and predicting a company's performance and situation and may also be used to investigate trends /movements and to evaluate a firm's financial figures to those of competitors or those of the business sector in which it belongs to especially banking sector (ICAP, 2006). Financial ratio analysis can also mean a process of examining the performance of a company but to a Banker, it is used to measure the adequacy of the liquidity and make sure the bank has the adequate cash flow to meet all requirements in a timely and cost-effective method (CBN, 2013).

Composite Financial Index (CFI) is a specific indicator of overall institutional financial strength or fitness centered on performance in four basic areas of finance which include sufficiency and flexibility of financial resources, management of debt, management, and performance of assets and results from operations (Austen Group, 2014). Meanwhile, each of these core areas of finance can be measured using CFI variables which include; Primary Reserve Ratio, Operating Revenue Ratio, Return on Assets, and Viability Ratio. The primary reserve ratio sets to know if the resources of a firm are sufficient and flexible enough to support the firm's objective. It can also be defined as a single metric that provides a practical and functional instantaneous evaluation or measurement of financial health given that flaws in definite parts of finance can be offset by strength in other institutions (PFM Group, 2013). The use of CFI analysis as a medium of checking both financial institutions' and companies' performance began in the mid-1990s (PFM Group, 2013). Originally, CFI was used to measure private universities' performance and to provide a distinct all-inductive financial metric to obscene the financial status and health of private universities (USM, 2012). In 2005, the composite financial index (CFI) methodology was to some extent improved to be used in measuring public universities and some other financial institutions performance as CFI Methodology was used as a major instrument to test for firms' performances after the 2008 world Economic crisis and recession as no alteration or modification was made on the methodology (PFM Group, 2013).

As a matter of regular practice, bank performance is measured using individual performance ratios. Specifically, bank performance can be measured to determine the profitability or loss made by banks which is ascertained by the procedure of ratios which are generally reported by Deposit Money Banks in their annual reports (Bentum, 2012). Using profitability indices as a measure of performance, Rasiah (2010) contends that the use of profitability indices is not predisposed by variations in the price level. He also maintains that it is the most reliable approach to measuring performance as long as the researcher makes use of time sequence in the investigation. This is so since the actual value of bank profits cannot be pretentious by the fluctuating inflation rates. The profitability of a bank is a bank's first line of defense against unforeseen losses, as it builds up its capital position and enhances impending profitability across the investment of retained earnings (ECB, 2010). While loss involves a situation where the bank fails to meet its obligations as a result of the bank's expenses exceeding profit. In this situation, ECB (2010) maintains that an institution that relentlessly makes a loss will in due course drain its capital base, which in turn puts equity and debt holders at risk. Rasiah (2010) has argued that for anyone to understand how healthy a bank is performing it is much more useful to take into account Return on Assets (ROA) and Return on Equity (ROE). Return on Assets (ROA) is one of the most common measures of a bank's performance. It is measured by Net Income after Taxes divided by Total Assets (CBN, 2002). The ROA indicates the capacity of management to procure deposits at a realistic cost and in profitable investment (Ahmed, 2009). This ratio indicates how much net income is made per naira of assets (CBN, 2010). A higher ratio signifies or denotes a higher performance of banks. Return on Equity (ROE) is also used to determine the rate of return on the bank's shareholders equity and it is measured by dividing the bank's net income after taxes by total equity capital which involves common and preferred stock, surplus, undistributed earnings, and capital reserve (CBN, 2013). This measure of profitability provides a clue of what the banks earn on the shareholders, investment but fails to give an account of the overall performance of such institution (Rasiah, 2010).

Banking instability in Nigeria is as old as the industry itself. The first major manifestation of bank failure in Nigeria occurred in 1929 when the industrial and commercial bank limited went into liquidation within a year of its operation as a result of its generosity and liberal extension of credit facilities to customers (Babalola, 2011). A series of Bank failures continued in 1930 as a result of poor banking habits of both customers and bank staff that operated in an environment that was not guided by any appropriate authority at the time (CBN, 2009). Since then, there have been intermittent occurrences of distress and failure in the industry (Financial Nigeria international, 2008). Meanwhile, one unique fact about the series of distress appears to be that each distress case of Nigerian banks usually took the banking public by surprise (Babalola, 2011). The main reason for this is the reliance on individual performance indicators. Individual financial performances ratios might give an impression that all is well with a bank and might not be able to reveal some elements of technical distresses. This was the major reason, according to CBN (2010) that led to the 2009 banking industry crisis in Nigeria despite the overhauling of the sector in 2005.

As earlier identified, a number of recent developments in the Nigerian banking industry have attracted scholarly and policy attention to the need to shift attention from the reliance on specific performance measures such as profitability to composite measures. Among such developments are the persistent instability in the industry and the recent transformation from universal banking to financial holding company structure. On the basis of this, this paper sought to review the applicability and relevance of the composite financial index (CFI) in analysis and predicting bank sustainable performance in Nigeria. The remaining part of this paper is structured as follows; section two states the problems of the study.

## 2. Statement of Problem

Bank performance is a measure of the viability of the bank to meet its obligation as spelled out by the apex bank and as demanded by customers and as well as another interest group. Though, in the banking business, banks engage in

different corporate services which require them to be meticulous in their dealings. This of course has attracted the attention of the stakeholders and the public in the sector to always be careful in their investment. It has also been reported in some kinds of literature that the general profitability of then banks in Nigeria from 2007 to 2013 has improved exceptionally as the average Capital Adequacy Ratio (CAR) of the banks in the sector was constantly above the fixed minimum of 10% in the first half of 2012 (Nwokoji, 2013).

Notwithstanding this, the use of individual ratios as a measure of performance appears to have misled the stakeholders in the banking sector. This is evidenced by the declaration made by the Central Bank of Nigeria in 2009 where five banks were declared insolvent. This came barely four years after the country's overhauling its banking sector by increasing the capital base of banks to N25 billion which generally shook the sector. Meanwhile, banks publish their annual reports and declare a profit, and stakeholders are always carried away by the level of profitability banks published. This continued until 2009 when Oceanic bank plc, International bank plc, spring bank plc, Afribank Plc, and Bank PHB plc were declared insolvent by the Nigerian apex bank (CBN, 2010). This of course appears to be misleading to both stakeholders and the entire public why CBN should make such a declaration when the profitability levels of these banks were overwhelmingly good or rated high.

It is on these premises that this research work stems to undertake a cursory look at the nature of sustainable bank performance in Nigeria and the debarring factors that have caused the widely acclaimed notion that most of the bank performance analysis have so much relied on the use of the conventional ratio analysis such as; ROE and ROA in measuring bank performance and hence conclude that Nigeria banks were performing until 2009 when some banks assumed to be profitable were technically declared insolvent by the Central Bank of Nigeria. Base on this, this study examines the applicability of the Composite Financial Index (CFI) in predicting bank sustainable performance in Nigeria. The remaining part of this paper is structured as follows

### **3. Objective of the Study**

The general objective of this study was to find out the level of banks' performance in Nigeria using the composite Financial Index (CFI). The specific objectives include:

- To find out the applicability of CFI in predicting the performance of banks in Nigeria
- To establish if CFI better predicated the 2009 banking crisis in Nigeria than the individual performance ratios.

### **4. Conceptual Review**

#### *4.1. Concept and Nature of Financial Index Analysis*

Index analysis is defined as a basic method of the investigation of financial statements from a variety of facets of the business. It can also mean or include an evaluation. Bank financial indices are measured with those of other banks in the same sector that is to bank average figures (Brigham and Houston, 2004).

Meanwhile, a ratio is a mathematical relationship between two or more accounting figures. It can be expressed as a pure ratio or as a rate of times or as a percentage. Hence, the relationship between two or more accounting figures or groups is called a financial ratio (Osuka and Osadume, 2013). Financial ratios may help to delineate considerable dimensions of financial data into a brief document so that it will help to interpret and conclude the nature of performance and true position of the banks. Ratio analysis is calculated in two different patterns, first and foremost, the calculation of ratio has to be done and secondly, the ratio has to be evaluated with encoding standards (CBN, 2004). The encoded standard can be the average ratio of a bank or the same bank's past ratio. When interpreting a particular bank financial status, the calculated ratio has to be compared with the encoded standard otherwise the analyst may not achieve or attain an operational deduction. CBN (2006) states that there are three types of different ways in ratio comparison; firstly, cross-section analysis, secondly, time series analysis, and thirdly, combined analysis. In cross-section analysis, it sets to know how a particular firm (bank) has performed in line with the bank's competitor by using the ratio of the bank to match up to the ratio of other banks in the same sector or more banks' financial ratio at the same time. Time series analysis measures to know if the bank is close to the long-term objectives or not, by evaluating the bank's present performance with the past performance of the bank (CBN, 2006). In combined analysis it involves the pooling of both cross-section and time series analysis, which is meant to study the standard and method of ratio, hence significant and collective or widespread appraisal of the bank's performance can be made.

Bank performance is a measure of the institution's viability to stand to the pressure and meet all the obligations assigned to it. Bank performance can generally be determined as bank profitability. Profitability of bank is quantified using Return on Asset (RoA) which is equal to net profit/total assets and indicates the competence of management to get deposits at an equitable cost and invest them in profitable investments (Ahmed, 2009). Mabwe and Webb (2010) also state that Return on Equity is also a measure to bank profitability. RoE is equal to net profit / total equity. This is the rate of return to shareholders or the percentage return on each Naira of equity invested in Nigerian banks. Mabwe and Webb (2010) maintain that bank performance is also being determined with liquidity as liquidity implies the proficiency of the bank to meet its financial requirements in an appropriate and applicable modus.

Despite the above approaches to measuring the performance of an institution, there are other ways to determining institutional health status or performance. In this case, Austen Group (2007) indicates that the financial indicator Tool (FIT) is the newest indicator to be used in determining the performance of an institution. The FIT was developed as a pilot for the council of independent Colleges in the 1990s and later the tool was used for both private and public institutions. These indicators are pooled into a single index score called the composite financial index (CFI) as explained in the research work on strategic financial Analysis for Higher Education. The composite financial index

includes; primary reserve ratio, viability ratio, returns on net asset ratio, and net operating revenue ratio. Each of these ratios has an area of coverage in terms of the firm's performance. For instance, the primary reserve ratio measures the financial resources sufficiency and financial elasticity, while the viability ratio measures the ability to cover the debt with available resources, and Return on Net Assets ratio gauges the overall asset return and performance (Austen Group, 2014). However, the viability ratio measures the ability of a firm to sufficiently and effectively handle its debt showing if the company can meet its absolute debt obligations with expendable assets which are calculated as the total resources that a firm could spend on operations divided by long-term debt (UT System, 2009). Net operating revenue ratio or Net income ratio is a standard or yardstick used to measure if operations by companies or institutions result in a surplus or a deficit or if firms are operating within available resources in their day-to-day duty (William, Jane, Glenn, Sandra and Lee 2009).

## **5. Empirical Review**

Different Studies in measuring banks' performance both within and outside Nigeria have emerged, connecting to this; Rasida and Mohd (2010) examined the relationship between performance and financial ratios of commercial Banks in Malaysia and China. The study covered all the commercial banks in both countries under study as a regression model was used to determine the Banks' performance levels of these countries. The results indicate that liquidity and operating expenses ratios have effects on the performance of the banks under study while credit and capital ratios have no effect on performance. The study also reveals that operating ratio impacts positively on China's commercial bank performance but does not have any effect on Malaysian bank performance. The paper concludes that the fundamental effect of financial ratio on banks' performance differs transversely or across countries and analytically and significantly may be influenced by other country-specific factors.

Shuijie, Dan, and Morgan (2008) investigated the empirical relationship between the Shanghai stock exchange composite index and the indexes of Ten Chinese listed banks to know if the listing of these banks had played a role in leading the Chinese stock market. The study used the Granger Causality model and found that a uni-directional causality relationship existed either way between most bank stock prices and the market index while the bi-directional relationship was only identified among five of the ten banks. The finding of the study indicated that stock markets in the great China region are strongly influenced by the psychological factors of investors and concluded a long-run stable equilibrium and the SSE composite index.

Daniel, Manfred, and Marco (2012) wrote on CISS – A composite indicator of systemic stress in the financial system in Europe. The main objective of the study was to know if the new indicator of contemporaneous stress in the financial system, that is the composite indicator of systemic stress is possible in measuring financial stress. The study adopted portfolio theory and used the CISS methodology. The results show that CISS puts relatively more weight on situations in which stress prevails in several market segments at the same time, capturing the idea that financial stress is more systemic and thus more dangerous for the economy as a whole if financial instability spreads more widely across the whole financial system. the paper concludes that CISS is the basis or explicit foundation on standard definitions of systemic risk.

Meanwhile, in Africa, Mabwe and Webb (2010) investigated the financial ratio analysis of commercial bank performance in South Africa, from 2005 to 2009. The paper sets to know if financial ratios have any effect on the global bank performance in South Africa. It made use of the regression equation and employed ROA to measure the profitability of banks and ascertained that general bank performance in South Africa intensified significantly in the first two years of the analysis. It also discovered that there is a substantial transformation in trend at the commencement of the global crisis in 2007. The study concluded by a startup that the South banking system remain stable as banks were adequately capitalized and profitable during the study.

Nabieu (2013) studied the structure, conduct, and performance of commercial banks in Ghana from 2007 to 2012. The paper adopted two different methods of concentration to measure bank performance as data on ROA and ROE were used to determine the profitability level of the banks under study as other ratios were generated from nineteen commercial banks the results show that market concentration and market share considerably determine profitability in Ghana, showing the robust acceptance of the SCP hypothesis. The paper recommends the necessity for advancement in bank capitalization size and effective liquidity management for the Ghanaian banking sector.

Osuka and Osadume (2013) investigated the determinants of financial performance of quoted banks in Nigeria using some selected deposit money banks from 2001 to 2010. The study used regression analysis and proved that; asset quality, capital adequacy and employee motivation apart from profits are key success factors in the financial performance of banks the paper suggests that profit should not form the only significant standards for assessing the financial performance of banks but satisfactory other basic factors should be acquainted with and there should be meticulously supervised by the central bank of Nigeria and other financial regulatory agencies in the country.

Olalekan and Adeyinka (2013) wrote on capital Adequacy and Banks' profitability in deposit-taking banks. The paper used primary and secondary, sources as questionnaires were used involving a sample size of 518 and financial statements of banks from 2006 – 2010. The study adopted a pilot survey as the findings reveal a non-significant relationship between the variables while the secondary data analysis indicates a positive and significant relationship between capital adequacy and profitability of banks in Nigeria. The paper unfolds that capitalization and profitability are indicators of bank risk management efficiency and bolster against losses not covered by current earnings. It recommends that the regulatory institution should make sure that the advantages of the banking reform's course of action are maintained.

Austen Group (2007) scrutinized the financial health of Hollius University in the National and Southeast Region using a financial indicators Tool called Composite Financial Index (CFI). The Group used a period of 1999 -2000. The study

used benchmarking comparisons for each of the four ratios and for the CFI was made with the same universe of colleges and universities found in the council of independent colleges (CIC). The study also adopted the CFI methodology and indicated that Hollins university viability ratio is above 2.0 indicating strong financial health which is good for the institution. Other indices used as a measure to test the financial health of the university appeared to be higher than the stipulated benchmarks. The work recommends that a higher composite financial index ratio gives a better chance for such institutions to Survive and institutions should strive to ensure that they maintain their reputation by engaging in businesses that will boost the core business objectives.

USM (2012) investigated the performance of the University of Southern Maine using core financial ratios and composite financial index. The study used industry benchmarks and ratios for a period between 2006-2011. The four composite financial indices were used to determine the performance level of the institution as the study adopted the CFI Methodology and discovered that at the lowest point in the last six years. The USM's expendable net assets covered less than a quarter of a month of expenses. At the highest point (FYII), expendable net assets covered just two months of expenses. The ratio also increased in 2011 as management efficaciously determined to exceed the high industry benchmark for the Net operating Reverses ratio which in turn helps to intensify the PPR. The paper recommends that institutions need to engender some level of surplus over long periods of time because operations are one of the sources of liquidity and resources for investment in institutional initiatives.

## 6. Theoretical Framework

The study theoretically adopts the Market Power Theory and Efficiency structure hypothesis. Though these hypotheses have existed before 1973 but were extensively formulated and alternative explanations were given to them in 1973 by Demsetz. Therefore, this work adopts these theories as developed by Demsetz (1973). Market Power (MP) theory in general, refers to the extent of influence that a firm possesses on the industry in which it manages or functions. This involves a state of affairs where companies are expected to have zero market power – an idea known as perfect competition. The theory emphasizes that individual firms should have no control over prices when other firms sell identical or virtually identical products (Investopedia, 2014). Applied in banking, the Market Power theory postulates that the performance of a bank is influenced by the market structure of the sector (Olweny and Shipho, 2011). In contrast, the Efficiency Hypothesis states that banks earn high profits. This is because they are more effectual or effective than others (Olweny and Shipho, 2011). The theory of Market Power theory is split into two popular hypotheses as extensively used in Fadilla and Viverita (2010). Firstly, Structure – Conduct – Performance (SCP) states that the level of concentration on the banking market intensifies to the hypothetical market power by banks which may increase their profitability. This means that banks with higher market power than others in higher concentration markets are able to set lower prices of deposit and higher prices of credit (Park and Weber, 2006). Secondly is the Relative Market Power Hypothesis (RMP) which states that bank profitability is influenced by market shares, which allows only large banks with discriminated products to control prices and enhance profits (Park and Weber, 2006).

## 7. Discussions

Therefore, to achieve the objectives of the study that set to find out the applicability of CFI in predicting banks' performance in Nigeria and to establish if CFI better predicated the 2009 banking crisis in Nigeria than the individual performance ratios. The variables that make up the composite financial index (CFI) were identified and compared with the contents of financial reports. The existence of those CFI variables in the financial reports was a strong indication that CFI can be applied in predicting bank's performance in Nigeria. Each of the CFI variables indicates various levels of performance in a firm. Each of these variables is also comparable to the CFI international weighting scale which indicates if a firm (bank) is weak or strong or falls within the threshold. The international weighting scale is shown in the table below:

Scoring Scale	1 Weak (%)	3 Threshold (%)	10 Strongest (%)
a PRR	13.3	40	133
b VR	41.7	125	417
c RNAR	2	6	20
d NORR	1.3	4	13

Table 1: Scale  
Source: PFM Group (2013)

Note: PRR-primary Reserve Ratio

VR- Viability Ratio

RNAR-Return on Net Assets Ratio

NORR-Net Operating Revenue Ratio.

In the averages of both single financial performance ratios and the composite financial index for the years preceding, the 2009 industrial crises would be compared with respective industrial averages. The alleged inability of individual ratios to predict the failure of a bank could be investigated. At the same time, Composite Financial Index (CFI) would also be

computed for each of the failed banks. The application of CFI methodology would also be used to calculate the values of the four ratios of CFI which will be converted to strength factors along a common scale as shown in table 1 above. Between the individual ratios and the Composite Financial Index (CFI) anyone that better revealed the consequent technical insolvency would form the basis of our conclusion on the second objective.

## **8. Issues / Literature Gaps and Outcome**

Based on the issues raised from the related kinds of literature reviewed it was observed that in most of the studies done within Nigeria, they focused on measuring individual bank's performance using individual performance ratio in determining profitability and this of course are in variance with studies coming from advanced countries of Asia, America, China, and South Africa which consider the entire banks performance using the key financial indicators to measure profitability or loss of entire banking sector in the countries.

It is on this background that this study stems to know if core financial indices can be used in measuring banks performance in Nigeria

In the light of this, Rasida and Mohd (2010) examined the relationship between performance and the financial ratio of commercial banks in Malaysia and China. The study used the major financial ratio variables to measure performance. Other studies, like Austen Group (2007) and USM (2012) also used CFI to measure performance in their various universities like studies in Nigeria have not used CFI to measure the entire banking sector performance, rather measure some selected banks some use the key conventional studies made by financial ratio variables. For instance the Osuka and Osadume (2013), Olakekan and Adeyinka (2013), Ogunbiyi and Ihejirika (2014) who in their studies wrote on the performance of selected banks but never measured the performance of the sector using the key variables of CFI. The study also observed as its gap that the popular or the most widely traditional ratios used by so many authors have some weaknesses, as performances in terms of profitability are not always accurate. This is because; inflation may have distorted a firm's balance sheet. In this case, profit will also be affected and ratio analysis of a firm (Banks) of different years must be interpreted with judgment. It is also noticed that the financial ratio only measures an individual firm's performance, unlike CFI that measures all the aspects of the firms' financial health.

## **9. Conclusion and Recommendations**

A variety of studies have used the conventional individual financial ratio analysis to measure performance in Nigerian banks over the years. Some of the results and findings indicated the weakness of using the traditional method of using financial ratio analysis in measuring performance in Nigeria Banks. This is evidenced from the crisis in the banking sector in 2009 barely four years after consolidation exercise in the sector. It was observed that despite the claims of defunct banks to be profitable, they were still declared insolvent by the apex bank in Nigeria. This study exposed the applicability of using composite financial index (CFI) in measuring the performance of the financial health of any institutions with special reference to banks since the indices are set to know the overall financial health of a firm.

The following recommendations were made;

- Nigerian banks should adopt the use of CFI as a measure of performance.
- Analysts that desire to use the conventional ratio analysis should as well apply the CFI analysis as a further confirmation of the results of conventional ratio analysis in measuring bank performance.

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