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ASSESSING THE IMPACT OF CREDIT FINANCING ON CASH FLOW PERFORMANCE: A STUDY OF SELECTED QUOTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT
The study investigated the effect of credit financing on cash flow performance of selected quoted deposit money banks in Nigeria for the period 2011-2022. Three research questions were developed to guide the study and a corresponding three hypotheses was formulated for the study. The study adopted the ex-post facto research design. The population of the study included all deposit money banks quoted on the Nigerian Stock Exchange (NSE) as at 31st December 2022. The study relied on secondary sources of data which was obtained from Nigerian exchange group (NGX) as at 31st December 2022. The multiple regression analysis was employed in validating the hypotheses of the study. Findings emanating from the study reveals that there is no significant effect of capital gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria; there is no significant effect of income gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria; there is significant effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria. Consequent on the findings, the study therefore recommended amongst others that stakeholders should prioritize initiatives aimed at improving operational efficiency, streamlining processes, embracing technological advancements, and optimizing resource utilization can lead to a positive influence on cash flow, ensuring the financial robustness of selected quoted deposit money banks in Nigeria.
Keywords: Cashflow, credit financing, operational efficiency, resource optimization

INTRODUCTION
The financial sector plays a pivotal role in supporting economic activities and driving growth in any country. In Nigeria, the banking industry, represented by Deposit Money Banks (DMBs), is a critical component of the financial system. DMBs serve as intermediaries that mobilize funds from depositors and channel these funds to borrowers in the form of credit financing, thus facilitating investment, consumption and overall economic development(Stierwald, 2009). Additionally, cash flow performance is a crucial indicator of a bank's financial health and

sustainability. Effective cash flow management is vital for maintaining liquidity, meeting financial obligations and supporting ongoing operations.

Prior studies have shown evidence that the relationship between credit financing and cash flow performance is of great significance for the stability and growth of DMBs in Nigeria(Olatunde&Odigwe, 2016). The ability of banks to extend credit to various sectors of the economy impacts economic growth, while their cash flow management determines their resilience to financial shocks and ability to maintain sustainable operations. Consequently, a comprehensive understanding of the dynamics between credit financing and cash flow performance is essential for policymakers, regulators, investors and other stakeholders in the Nigerian financial sector.

Credit financing is one of the primary functions of DMBs in Nigeria. As financial intermediaries, DMBs mobilize deposits from individuals, businesses, and other entities and, in turn, extend credit to borrowers through various financial instruments such as loans, overdrafts, and credit facilities which has strong impact on cashflow performance (Central Bank of Nigeria [CBN], 2020). Cash flow performance is a key indicator of a DMB's financial strength and stability. The cash flow statement, a critical component of a bank's financial statements, provides insights into the cash generated and used by the bank during a specific period. Positive cash flow indicates that the bank is generating sufficient cash from its operating activities, while negative cash flow may suggest liquidity challenges and financial strain (Agbonika, 2017).

Over the years, the Nigerian banking industry has experienced significant developments and reforms aimed at strengthening credit financing and enhancing access to finance for various sectors of the economy. However, challenges such as non-performing loans, regulatory constraints and economic downturns have also posed risks to credit quality and financial stability (Iyoha&Oriakhi, 2018).

The impact of access to credit financing on business performance remains ambiguous and subject to debate among researchers (Beck &Demirguc-Kunt, 2006). Some argue that improved access to credit can enhance performance, while others contend that the costs associated with financing may offset its benefits (Pilai&Kaushal, 2020). The economic perspective suggests that expanding access to credit financing holds the potential to boost performance by stimulating investment in under-funded enterprises.
The motivation for this study arises from the diverse outcomes observed in previous research on credit financing and its impact on the performance of firms in Nigeria and internationally (Osegbue, Nweze, Ifurueze, &Nwoye, 2018). The existing literature however has yielded disparate findings, leading to a lack of consensus on the causal relationship between these variables(Pilai&Kaushal, 2020; Asiriuwa, Aronmwan, Uwuigbe, &Uwuigbe, 2018). Consequently, there is a need for empirical evidence to ascertain the true nature of this relationship.

Moreso, addressing this research gap is the primary objective of this study. The problem at hand includes challenges such as limited access to bank loans and advances, as well as commercial banks' hesitancy to extend overdraft facilities to manufacturing firms due to concerns about timely repayment. Additionally, high costs associated with leasing equipment further compound the problem and the inefficient and ineffective performance of Nigeria's firms underscores the need for improvement.

Despite abundant resources, the expected economic well-being of businesses is not materializing as deposit money banks which are the custodians of investment funds are unable to secure external financing thus may encounter significant difficulties in competing favorably within the competitive industrial landscape. Given the enormous regulations and control measures put together by the Central Bank of Nigeria (CBN), access to loans and advances for deposit money banks could be a little complex. Although, credit financing may enable the bank to pursue profitable ventures that would otherwise be financially unattainable. To address this issue, the researcher aims to conduct a study on the effect of credit financing on the cashflow performance of selected quoted deposit money banks in Nigeriaas a case study.

Objectives of the Study

The main objective of the study is to ascertain the effect of credit financing on cash flow performance of selected quoted deposit money banks in Nigeria. The specific objectives of the study are as follows:

i. To examine the effect of capital gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.
ii. To determine the effect of income gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.
iii. To ascertain the effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

Hypotheses

The following hypotheses were also formulated in line with the objectives and research questions stated in the null form as follows:

i. H_{01}: There is no significant effect of capital gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.
ii. H_{02}: There is no significant effect of income gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.
iii. H_{03}: There is no significant effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Review

Credit Financing

Financing is an essential element for profitability of a business enterprise irrespective of its size or industry where it operates (Stierwald, 2009). Financing facilitates the primary economic functions of production and distribution. Financing ensures that a firm is liquid enough to meet working capital needs. With availability of financial resources, industrial development is initiated since it is possible to take advantage of new investment opportunities as they arise (Karlan&Morduch, 2009). Debt and Equity are the formal sources of finance for investment. Informal financing for entrepreneurs involves accessing their own savings and those of family, friends, and even neighbours. Entrepreneurs seek informal ‘angel’ investors who provide financial capital as well as business expertise for running a firm. Business owners who seek financing face a fundamental choice: should they borrow funds or take in new equity capital?

Since debt and equity have very different characteristics, each has a different impact on earnings, cash flow and so on. Each also has a different effect on a Company's leverage, dilution, and a host of other metrics by which businesses are measured. Each financing option brings a different type of relationship with the respective financing source. The Company's planned use of funds, desired relationship with the capital source, and type or stage of the company will largely determine the optimal form of financing for a given situation. Reasonable terms of financing induce or encourage entrepreneurs to expand their horizon of conceivable opportunities.

Access to credit financing attracts those who are inhibited by lack of capital thus the process of economic development sets in (Goldsmith, 1969). This tends to increase the capacity of enterprises to take advantage of investment opportunities. Credit financing boosts a firm's capital base enabling it undertake opportunities that arise in its operating environment (Stiglitz& Weiss, 1981). Size of a firm has been cited as a determinant to access of credit facilities by an enterprise.

Challenge of access to Credit financing

Unavailability of finance was singled out as the main reason behind the high failure of firms to pay as at when due. For newly established firm with no credit record, access to finance could be very difficult especially when the owner has few assets to guarantee lenders that he or she has the capacity to service the loan. (Beck and Demirguc-Kunt, 2006). The other challenge is that of moral hazard, that is to say, firm owners or managers may divert the money to other undisclosed projects (Sibanda, Sibanda&Shava, 2017)

This challenge may be fueled by poor financial control measures highly exhibited among firms (Stokes & Wilson 2006). In this study, access to finance was measured by the following four items adopted from Contessi and De Nicola (2012) and Spicer (2010); access to long-term debt finance, finance and other sources to expand decisions that influence the place and time to export, access to credit as an obstacle to business and cash flow as well as payment risks that influence the decisions of the place and time.

Firm`s Performance

Performance is the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It measures management efficiency in the use of organizational resources in adding value to the business. Profitability may be regarded as a relative term measurable in terms of profit and its relation with other elements that can directly influence the profit (Nwaechina, 2013).

Corporate profitability is a measure of the amount by which a company's revenues exceeds its relevant expenses. It is an evaluation of management's ability to create earnings from revenue-generating bases within an organization. Thus, Management is interested in measuring the operating performance in terms of profitability. Hence, a low profit margin would suggest ineffective management and investors would be hesitant to invest in the firm. Profitability is the ability to make returns from all the business activities of an organization, company, firm, or an enterprise and the concern of every firm lies with its profitability. Profitability shows how efficiently the management can make profit by using (Nwaechina 2013).

Profitability is also considered as the rate of return on investment and a widely used financial measure of performance. Hence, if there will be an unjustifiable over investment in current assets then this would negatively affect the rate of return on investment. The primary goal of credit

management is to control current financial resources of a firm in such a way that a balance is reached between profitability of the firm and risk associated with that profitability (Ifurueze 2013). The greater the risk associated with a business the more profitable it is adjudged and vice-versa. Profitability is determined by the capital structure, size, growth, market discipline, risk and reputation of a firm. Corporate profitability is measured using ratio analysis. Profitability in relation to sales includes ratios such as gross profit margin (GPM), net profit margin (NPM), operating expense ratio (OER), and so on**.**

Cash flow performance

Cash is the life blood of any business and vital to the well-functioning of its daily activities. Cash refers to money which a business organization or firm can disburse immediately without restriction (Pandey, 2010). The definition of cash includes: coins, currencies and cheque holding by the firm and balances in its bank account (Nwarogu&Iormbagah, 2017). According to Narkabtee (2000) the "importance of cash flows cannot be overemphasized mainly because the users of accounting information are particularly interested in the cash of the company that is published in its financial statements". Cash flow is the net amount of cash and cash-equivalents moving in and out of a business. The cash flows of an organisation refer to those "pool of funds that the company commits to its fixed assets, inventories, account receivables and marketable securities" (Uremadu, 2004).

Three factors directly influence a firm's access to cash: (i) cash from accounts receivables is not available to firms while they are awaiting customer payments for delivered goods; (ii) cash invested in goods is tied up and not available while those goods are held in inventory; and (iii) cash may be made available to a firm if it chooses to delay payment to suppliers for goods or services rendered (Richards & Laughlin, 1980). Lack of cash may cause a company to file for bankruptcy. Therefore, efficient cash management not only prevents bankruptcy but helps improve the profitability of a firm (Sharma & Kumar, 2011) and increases chances of growing without need for external financing (Churchill & Mullins, 2001).

The solvency, flexibility and the financial performance of the firm are set on the firm's ability to generate positive cash flows from the operating, investing and financing activities (Turcas, 2011). The statement of cash flows quantifies a company's cash inflows and outflows in a manner different from that of the balance sheet and income statement (Amuzu, 2010). This practice has been part of Nigeria's GAAP since the introduction of Statements of Standard Accounting Practice (SSAP) 10, Statements of Source and Application of Funds. Prior to that date entities were required to prepare a statement of changes in financial position (commonly referred to as a "fund statement") (Nwaiwu&Oluka, 2017). However, in 2007 IAS 7 was retitled from 'Cash Flow Statements' to 'Statement of Cash Flows'; and, following the mandatory adoption of IFRS for publicly listed companies in Nigeria became applicable to firms listed on the Nigerian Stock Exchange (NSE).

Theoretical Review

Agency Theory

Agency theory can be traced to the early works of Berle and Means (1932), and first formulated by Ross in the 70's (Ross, 1973). The theory was first associated to agency costs by Jensen and Meckling (1976). Jensen and Meckling (1976, p. 308) defined an agency relationship as a "contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent".

According to Namazi (2012) the theory relates to a situation in which one individual (agent) is engaged by another individual (principal) to act on his/her behalf based upon a designated fee schedule. Agency costs are the sum of the monitoring expenditures by the principal, the bonding expenditures by the agent, and the residual loss (Jensen &Meckling, 1976).In the business context, agents correspond to managers, whereas principals correspond to shareholders (Shafai, Amran, &Ganesan, 2018). Thus, agency relationship exists when shareholders (principals) hire managers (agents) as decision makers in corporations (Ruangviset, Jiraporn, & Kim, 2014).

In a company's environment, DeFond (1992) identified two features of the agency problem; first, divergence in preferences of the manager and owner with respect to the manager's actions; and the imperfect observability of the managers' actions by the owner (DeFond, 1992). Two problems usually occur when one party (the principal) delegates work to another (agent). *Firstly*, is the conflict of goals between the two parties and costs associated with the minimisation of such discrepancy; and, *secondly*, the problem of risk sharing when the risk preference of both parties differs (Eisenhardt, 1989).

Agency theory provides "a useful way of explaining relationships where the parties' interests are at odds and can be brought more into alignment through proper monitoring and a well-planned compensation system" (Davis, Schoorman, & Donaldson, 1997). According to Daily, Dalton and Canella (2003), two factors have influenced the prominence of agency theory. *Firstly*, the theory is conceptually simple by reducing the corporation to two participants, managers and shareholders. *Secondly*, the notion of human beings as self-interested is a generally accepted idea. Agency theory may be applied to any contractual relationships in which the principal and agent have partly differing goals and risk preferences, for example, compensation, regulation, leadership, impression management, whistle-blowing, vertical integration, merge & acquisition, and transfer pricing (Eisenhardt, 1989).

Empirical review

Rugui & Omagwa, (2018) determined the effect of financial management practices on performance of selected Small and Medium Enterprises (SMEs) in Lemur Town, Kenya and discovered that SME performance is affected by financial constraints, financial illiteracy, working capital management, ownership structure, regulatory framework and macroeconomic factors. The study employed descriptive research design and target population was 388 registered SMEs in the retail business in Lemur Town. Purposive sampling technique was used to sample 39 respondents. Data was collected using questionnaires. Data was analyzed through descriptive statistic (means and standard deviation), correlation analysis and multiple regression analysis. The study found that firms financing and ownership structure have fairly strong positive correlation with performance, while cash management does not have a positive correlation with performance.

Adebiyi, Banjo, Oko-Oza, (2017) investigated the implications of Finance on the performance of enterprises in Lagos State to study the impact of finance on the performance of small and medium enterprises in Lagos State. The research design adopted for the study is survey research design. Data analysis and hypotheses test from 250 SME owners and operators using Pearson correlation and regression analysis indicate that, there is a relationship between SME finance and business performance. Limited information on loan qualification criteria and high interest rate mostly pose challenge to SMEs in their quest to access finance. Results also show there is significant relationship between financial management practices and the performance of SMEs.

Thomas (2017), examined various factors influence on performance of Firm. Finance and credit are two of the factors examined to study their impact on firms' performance. The study investigated that the access to finance is one of the most critical factors faced by firms and its

impact factor is high on firm performance. The study discovered on Limited access to finance, high interest rates, bureaucracy in getting finance and low level of financial management skills leads to less production activity less competent due to inability to purchase required technology and limited resources production facility and concluded that finance and credit related issues of MSEs are having high impact and more difficult to resolve it.

Das (2017) carried out study on opportunities, issues and challenges of MSMEs in India and found out that institutional credit is one of the challenges to MSMEs in India.Available information on flow of credit to this sector indicates a declining trend from 17.34% in 2010 to 10.20% in 2013. One of the key issues identified by the committee is the financial institutions/Banks face challenges in credit risk assessment of MSMEs. One of the conclusions regarding credit is easy and timely access to credit is crucial factor to development and growth of enterprises.

Chaitra and Al Malliga (2016) conducted study on growth and performance of MSMEs and found out that inadequate credit facility definitely hinder the competitiveness of Small Scale Industries (SSI). The research also explained that the total bank credit to MSME sector stood at Rs.833 billion in the financial year 2015 and has grown at compounded average growth rate of 25% to 7.9 trillion in the year 2014. Still there is huge demand for the financial assistance to small enterprise. It is argued that banks are reluctant to bend small units as this segment has high non-performing assets (NPAs). The fact is that NPAs are prevalent across-the-board as between larger and smaller industrial units. The only difference is that there is "glamour" in lending to larger units.

Obokoh, Unam&Ojiako, (2016) carried out study to investigate Microfinance banks and small and medium sized enterprises access to finance Nigeria and found out positive contribution of microfinance lending to the development of such enterprises. The study explored the extent to which current microfinance lending impacts on indigenous SME access to finance and how the intermediation services of the microfinance banks (MFBs) contributed to or otherwise to the development of SMEs. A total of 800 such indigenous SMEs were identified; however, data were obtained from 300 of the identified indigenous SMEs from a questionnaire survey in four states (provinces) within the country that make up the Niger Delta region. However, it appears that a number of factors including cumbersome process, poorly packaged business plans and perceived high cost of credit still limit the access of indigenous SMEs to credit.

Joseph (2015), the study found out that credit sources influence the performance of SMEs, credit and performance of SMEs have positive influence. Study concluded that the credit programs which have high interests and terms and conditions have to avoid by the SMEs. Those type of credits leads to negative performance of SMEs. In fact, the research totally focused on informal credit but finally proved that the credit has impact on performance of SMEs. The reduced cost of credit and flexibility was found to enhance the access of credit which in turn led to increased business performance.

Triloknath and Deeksha (2015) complained that the credit acceleration in the sector had significantly noticed absolute growth but proportion of MSE credit in net bank credit has been more or less at same level of 14%, which was way back in year 2000 despite widening the coverage of the MSE sector. The research analysis has indicated that real growth in finance to MSE sector is not adequate in light of significant contribution of the sector in economy such as employment, manufacturing and exports of the country. Low share of MSE credit does not only hamper equitable growth of economy but also fails to banks to fulfil their social commitment to the growing society.

Anwar (2014), in his research study which examined the effect of credit disbursement on the performance of MSMEs. The study reveals that credit disbursement and output inputs of the MSMEs have a significant positive effect on the support of MSMEs.

Biswas (2014) had focused on the access to finance by MSMEs. Research noted that the main constraint that MSMEs face timely access to finance. The researcher tries to analyses the various constraints that MSMEs are facing today with reference to banking sector. Lack of availability of adequate and timely credit, high cost of credit, collateral requirements, etc. are considered various financial constraints faced by MSMEs in the research and also mentioned various problems faced by banks in lending to MSMEs. Major area of research focused on credit guarantee schemes. The credit guarantee scheme has emerged out as one of the most popular schemes for the MSME sector over the last decade. That most of the banks sanction loans through the schemes called 'Credit Guarantee schemes.

Nagayya (2013) examined credit flow to MSEs for the period of 2004 to 2012. He stated that the screening methodology of financing institutions needs to consider non-financial parameters and management competencies while evaluating loan proposals of SME units. The working groups on credit flow to SMEs under the chairmanship of K.C. Chakrabarthy and the prime minister's taskforce on SMEs have suggested a number of measures for sustained development of the SME sector.

Norhaziah and Shariff (2011) explored the importance of micro financing to the development of micro-enterprises. The paper examines the microfinance programs offer to the MES and concluded that the credit is always become the missing link for micro enterprises. They noted that limited access to credit for both new and growing firms becomes a major barrier for micro entrepreneurs to start and expand their business. Micro credits are seen as an efficient instrument in helping micro-enterprises that faced financial constraints. The credit allows micro-enterprises to acquire assets, start business, finance emergency needs and insure themselves against negative shocks. Finally, it has proved that the credit can help micro enterprises to boost up the business.

Fennee (2010) studied on a assesses to credit management of micro-enterprises, revealed that about 59 percent micro enterprises not paying their loans on time due to lack of credit management practices. The study concluded that the financial capacity of entrepreneurshas not any significant impact on credit management of micro enterprises.
Dasanayaka (2009) focused on informal sector of SMEs and said that the sector is lifeline to employment, economy, social stability and regional development. The study also finds that lack of first-hand information is the main obstacle to growth and development of MSEs. The research particularly focused on coherent policies and strategies to develop SMEs to their full potentials to accelerate economic growth and development.

METHODOLOGY

Research Design

The study adopted the *ex-post facto* research design based on the fact that the study seeks to examine the impact of past factor(s) on the present happening or event, and its strengths as the most appropriate design to use when it is not always possible to select, control and manipulate all or any of the independent variables. An ex-post-facto research design observes events (activities

of companies as reduced to figures) after they have occurred (reporting year) (Asiriuwa, Aronmwan, Uwuigbe, &Uwuigbe, 2018).

Population of the Study

The population of the study comprised of selected quoted deposit money banks in Nigeria as at end of 2022 financial year. The banks that constitute the population are included in the table below as captured in the Nigerian exchange group (NGX) fact book:

Table 3.1: Number of firms by sector included in the population

SN	Companies	Countries	Exchange Sector	Primary Business
1	Access Bank	Nigeria	Finance	Bank
2	Fidelity Bank	Nigeria	Finance	Bank
3	First Bank Holding	Nigeria	Finance	Bank
4	First City Monumental Bank	Nigeria	Finance	Bank
5	Guaranty Trust Bank	Nigeria	Finance	Bank
6	Stanbic IBTC Holding	Nigeria	Finance	Bank
7	Sterling Bank	Nigeria	Finance	Bank
8	Union Bank of Nigeria	Nigeria	Finance	Bank
9	United Bank for Africa	Nigeria	Finance	Bank
10	Unity Bank	Nigeria	Finance	Bank
11	Wema Bank	Nigeria	Finance	Bank
12	Zenith Bank	Nigeria	Finance	Bank
13	Heritage Bank	Nigeria	Finance	Bank
14	Keystone Bank	Nigeria	Finance	Bank

Source:NGX, 2022

Sample Size and Sampling Technique

Despite the population size, the study was limited to 12 deposit money banks in the population; the decision was premised on the classification of the banks as internationally licensed deposit money bank (based on the nature and description of activities) as shown on the country's Nigerian exchange group.

Table 3.2: Sample selection

Sector/criteria	Number of deposit money banks
Total Population	14
Less: Keystone Bank	1
Less: Heritage Bank	1
Total sample size	**12**

The exclusion of other banks was consistent with prior studies; banks not publicly quoted were mainly excluded and other financial firms because of the different regulatory environments, and it is also challenging to estimate discretionary accruals for these firms (Abid, Shaique, & Anwar-ul-Haq, 2018; Tsipouridou&Spathis, 2012). To arrive at the total sample size employed in the study, any bank whose required data are incomplete, few or unavailable was eliminated from the

sample. The final sample percentage with respect to the population is approximately 85.71% of the entire population on the Nigerian exchange group.

Sources of Data Collection

Data collection is a crucial stage of a study that entails gathering all the necessary and required information from essential sources to be used for the analysis (Kumar, 2011). The data for this study was obtained from secondary sources extracted from the annual reports of sampled banks and compiled by Machame Ratios®, a financial research company based in Canada(www.machameratios.company.site). Secondary data is information or data that has previously been collected and recorded for other purposes (Blumberg, Cooper, & Schindler, 2008). One major advantage of secondary data is that analysis time can be saved (Blumberg, Cooper, & Schindler, 2008). The data was extracted from the annual reports and accounts of the selected banks. Specifically, the Statement of Financial Position and Statement of Profit or Loss and Comprehensive Income provided data in computing the selected ratios; as the Statement of Cash Flows.

Techniques for data analyses

The study employed both descriptive and inferential statistical techniques to analyse the dataset under study. The summary statistics was computed such as the mean, median, standard deviation, minimum, maximum values, Skewness-Kurtosis statistics, etc. The correlation matrix was also constructed to identify nature of association between the variables.

Lastly, Fixed or Random effect and Pooled OLS regression was used to validate the hypotheses. Other preliminary diagnoses test was also carried out such as variance inflation factor (VIF) to test for multicollinearity test, shapirowilkfor normality test, hausman'stest for choice of FE or RE regression and heteroskedasticity test for serial correlation test, (Woodridge, 2003). These tests will help to determine the most appropriate model to employ. The goodness of fit of the model was tested using the coefficient of determination (R-squared) and analysis was done via STATA statistical software. In view of the dependent, independent and control variables of the study, the following model was proposed to examine the relationship between credit financing and cash flow performance of selected quoted deposit money banks in Nigeria. This approach is in line with Hair, Black, Babin, Anderson, and Tatham (2006).

Model Specification

$$NOCF_{it} = \beta_0 + \beta_1 CGR_{it} + \beta_2 IGR_{it} + \beta_3 OGR_{it}\ \beta_4\, SIZE_{it} + \beta_5 ROA_{it} + \beta_6 AGE_{it} + + \varepsilon_t \ldots (1)$$

Where:

NOCF	=	Net Operating Cash Flows
CGR	=	Capital Gearing Ratio
IGR	=	Income Gearing Ratio
OGR	=	Operating Gearing Ratio
SIZE	=	Firm Size
ROA	=	Returns on Assets
Age	=	Firm Age

Description of Variables

Label	Description	Variable Type	Proxy for	Measurement	Source
NOCF	Net operating cash flows	Dependent	Cashflow performance	Measured as {Net Income + Non-Cash Expenses + Changes in Working Capital}	Widiatmoko and Indarti (2019)
CGR	Capital gearing ratio	Independent	Credit financing	Measured as the ratio of long-term liabilities to long-term liabilities plus equity.	Amahalu, and Ezechukwu, (2017)
IGR	Income gearing ratio	Independent	Credit financing	Measured as the ratio of interest charge to profit before interest and tax.	Onyali and Okafor, (2018)
OGR	Operating gearing ratio	Independent	Credit financing	Measured as the change in profits to change in sales	Riahi-Belkaoui, (2003)
SIZE	Firm Size	Control	Credit financing	Firm size was measured as the logarithmic transformation of total asset.	Onyali and Okafor, (2018)

Source: Authors' compilation, 2023

Decision Rule

The decision rule is based on the sign and significance of the computed *t-statistic* from the regression output. If the p value of the *t-statistic* <0.05 (the chosen alpha level) the null hypothesis is rejected; and, the variable is postulated to have a significant effect. On the other hand, if the p value of the *t-statistic* >0.05 (the chosen alpha level) the null hypothesis is accepted; and, the variable is postulated to have no significant effect.

Data Presentation

This inquiry was set to investigate the effect of credit financing on cash flow performance of selected quoted deposit money banks in Nigeria between the periods of 2011-2022. Table 4.1 exhibits the "descriptive statistics" where it described the nature of the variables used. It also displays the number of occurrences of each measure and the description of their mean, standard deviation (StdDv), maximum (Max), and minimum (Min) values.

Table 4.1: Descriptive Statistics

```
. summarize lg_nocf cgr ogr igr size age

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
     lg_nocf |         87    18.27588    1.223335   15.41792   20.57188
         cgr |        144    .3664011    3.402085  -39.88834   2.677974
         ogr |        144   -2.945308    42.42234  -464.8754   162.9949
         igr |        144    .0059359    .1027308  -1.181275     .14695
        size |        144    9.233412    .4186921   8.194532   9.980886
-------------+---------------------------------------------------------
         age |        144       26.25    15.47906          6         53
```

Source: Author (2023)

Table 4.1 above reflects 144 observations from 12 deposit money banks and 12-year period (2011-2022). On average, the net operating cash flows for the observed entities are around 18.28, with a moderate degree of variability (standard deviation of 1.22). Moreso, the mean capital gearing ratio is 0.37, suggesting a moderate level of capital gearing. However, the high standard deviation indicates a wide range of variability in capital gearing ratios, with values ranging from negative to positive.

Furthermore, the mean operating gearing ratio is -2.95, indicating a negative average operating gearing. The wide range (as indicated by the high standard deviation) suggests significant variability in operating gearing ratios, with values ranging from strongly negative to positive. The mean income gearing ratio also shows a value of 0.0059, suggesting a low average income gearing. The standard deviation indicates some variability, with values ranging from negative to positive.

Considering the control variables (firm size and firm age), the mean size of the observed entities is 9.23, with a moderate degree of variability (standard deviation of 0.42) while the mean age of the observed entities is 26 years, with a relatively high degree of variability (standard deviation of 15.48).

Table 4.2 Normality test

```
. swilk lg_nocf cgr ogr igr size age

                    Shapiro-Wilk W test for normal data

    Variable |        Obs       W          V          z       Prob>z
-------------+---------------------------------------------------------
     lg_nocf |         87    0.97350      1.949      1.469    0.07091
         cgr |        144    0.08509    102.800     10.480    0.00000
         ogr |        144    0.19802     90.110     10.182    0.00000
         igr |        144    0.17893     92.256     10.236    0.00000
        size |        144    0.98226      1.993      1.560    0.05932
         age |        144    0.87588     13.947      5.961    0.00000
```

Source: Author (2023)

The Shapiro-Wilk test is used to assess whether a given sample comes from a normally distributed population. Table 4.2 shows the results for the variables lg_nocf, cgr, ogr, igr, size, and age: The p-value (0.07091) is greater than the common significance level of 0.05. Therefore, there is insufficient evidence to reject the null hypothesis of normality. The data for lg_nocf appears to be approximately normally distributed.

Moreso, the p-value (0.00000) is less than 0.05, indicating strong evidence against the null hypothesis of normality. The data for capital gearing ratio (cgr) does not appear to be normally distributed. Also, the p-value (0.00000) for operating gearing ratio (ogr) is less than 0.05, suggesting strong evidence against the null hypothesis of normality. The data for ogr does not appear to be normally distributed.

The table also revealed a p-value (0.00000) for income gearing ratio (igr) which is less than 0.05, indicating strong evidence against the null hypothesis of normality. The data for igr does not appear to be normally distributed.

Concerning the control variables, the p-value (0.05932) for firm size is greater than 0.05. Therefore, there is insufficient evidence to reject the null hypothesis of normality. The data for size appears to be approximately normally distributed, but there might be a slight deviation. Finally, the p-value (0.00000) for firm age is less than 0.05, suggesting strong evidence against the null hypothesis of normality. The data for age does not appear to be normally distributed.

Summarily, cgr, ogr, igr, and age do not seem to follow a normal distribution based on the Shapiro-Wilk test. lg_nocf and size show some evidence of being approximately normally distributed, but caution should be exercised, especially with size where the p-value is close to the 0.05 threshold. However, the study proceeded with non-parametric regression analyses with no intention by the researcher of changing the data but to carefully interpret the probability statistics against the t-statistics in line with the recommendation of Guajarati, (2004).

4.2 Data Analyses

Before continuing, the pooled OLS was undertaken to ascertain whether the fundamental tenets of the OLS regression were consistent with the investigation's goals. These diagnostics tests include tests for multicollinearity and tests for heteroscedasticity and these were preceded by tests for association or correlation between the dependent constructs and the independent constructs of the study. Hence, the Spearman Rank correlation analysis was conducted to test this association and relationship as shown below.

Correlation Analysis

The present investigation used the Spearman Rank Correlation Coefficient (correlation matrix) to examine the relationship between the parameters, and the outcomes are shown in Table 4.3 below.

Table 4.3: Correlation Analysis

```
. correlate lg_nocf cgr ogr igr size age
(obs=87)

             |  lg_nocf      cgr      ogr      igr     size      age
-------------+------------------------------------------------------
     lg_nocf |   1.0000
         cgr |   0.2064   1.0000
         ogr |  -0.1948   0.1381   1.0000
         igr |   0.0889   0.3115  -0.0025   1.0000
        size |   0.6820   0.2360   0.0200   0.1009   1.0000
         age |   0.0626   0.3008   0.0010   0.0677   0.0894   1.0000
```

Source: Author (2023)

Table 4.3 above revealed broadly that, lg_nocf is strongly positively correlated with size, moderately positively correlated with cgr, and weakly correlated with igr and age. It is weakly negatively correlated with ogr. These correlations provide insights into potential relationships between these variables, but causation cannot be inferred from correlation alone. The specific correlation between the dependent and independent variables of the study is thus given as follows:

There is a positive but weak correlation (0.2064) between lg_nocf and cgr. This suggests a slight tendency for net operating cash flows to increase with capital gearing ratio, but the relationship is not very strong.There is also a weak but negative correlation (-0.1948) between lg_nocf and ogr. This suggests a slight tendency for net operating cash flows to decrease with operating gearing ratio, but the relationship is not very strong.

Moreso, the correlation matrix revealed a positive but very weak correlation (0.0889) between lg_nocf and igr. The correlation suggests a minimal tendency for net operating cash flows to increase with income gearing ratio. Furthermore, there is a strong positive correlation (0.6820) between lg_nocf and size. This indicates a substantial tendency for net operating cash flows to increase as the size of the entity increases. Firm age shows a very weak positive correlation (0.0626) with lg_nocfsuggesting a minimal tendency for net operating cash flows to increase with the age of the entity.

Regression Analysis

Specifically, to assess the cause-effect links between the constructs and also test the stated assumptions, the study used a panel regression analysis with either a fixed or random effect. The "Hausman test and the Breusch and Pagan Lagrangian Multiplier test" otherwise known as LM test for random effects were utilized to confirm the choice between "fixed and random effects regression models".

To control the adverse effect of outliers in our analysis, the study carried out log transformation onthe net operating cashflows and total assets to generate lg_nocf and size respectively. The regression outcomes gotten from the combined regression analyses are obtainable and discussed in Table 4.4 below so that at a glance the outcome of all the tests conducted is easily seen. It comprises the results of the OLS regression model and panel data regression with fixed and random effects.

Table 4.4: Combined regression result

	1	*2*	*3*
	LG_NOCF (Pool OLS)	**LG_NOCF (Fixed effect)**	**LG_NOCF (Random effect)**
CONS.	-1.780 {0.440}	14.219 {0.303}	-1.780 {0.438}
CGR	0.757 {0.323}	1.837 {0.077}*	0.757 {0.320}
OGR	0.013 {0.006}***	-0.013 {0.009} ***	-0.013 {0.005}***
IGR	-0.044 {0.953}	-0.392 {0.613}	-0.045 {0.953}
FSIZE	2.120 {0.000}	3.665 {0.040}**	2.120 {0.000} ***
AGE	-0.002 {0.779}	-0.097 {0.345}	-0.002 {0.778}
F-Stat	**17.19{0.000}*** **	**7.24{0.0000}*** **	**85.96{0.000}*** **
R- Squared	**0.5149**	**0.2413**	**0.5149**
VIF	**1.12**		
Hausman test		**2.91 {0.5735}**	
LM test		**1.00 {0.000}*** **	
Heteroskedasticity	**1.98 {0.1589}**		

Note1: *bracket {} are p-values: 2: *, **, ***, implies statistical significance levels at 10%, 5% and 1% respectively*
Source: SATA 14.2/Author (2023)

The F-Statistic

A big F-statistic (F-stat) with a small probability value (p-value) means that H_0 should be rejected, and we would assert that there is a general link between the dependent and explanatory constructs while a small F-stat, with a big p-value, would indicate that there is no relationship. The decision rule was to reject the H_0 at a significance level of p-value less than 5% (i.e., $p < 0.05$). Consequently, and judging from the records in Table 4.4, the F-Stat figures form the pooled OLS, fixed effect and random effect have values of 17.19, 7.24 and 85.96respectively. All have a p-value of 0.0000 which is less than 0.05 suggesting that we reject the H_0 and accept the alternate. This says that our OLS regression model generally was statistically significant at a 1% significance level. The regression model is hence reliable and suitable for statistical inference.

The R-Squared (R^2) or Coefficient of Determination

Here again, from the records in Table 4.4, the R-Square figures from the pooled OLS, fixed effect and random effect have values of 0.5149, 0.2413 and 0.5149respectively. This revealed that about 51.49%, 24.13% or 51.49% of systematic variations in dependent variable was jointly explainable by the explanatory and control constructs in the model. unexplained component can be attributable to the inclusion of additional independent factors that could have an impact on

lg_nocf but were instead included in the error term.To further validate the OLS regression forecasts, some post-regression tests were carried out as illustrated beneath.

Multicollinearity Test (VIF)

The degree of multicollinearity was tested using the VIF. A VIF test result of a value greater than 10 is a sign of the existence of multicollinearity and calls for concern.From the records in Table 4.4, the mean VIF value of 1.12 designates the nonexistence of multicollinearity in the models, and this suggests that no explanatory construct should be released from the models.

Fixed and Random Effect Regression Test

Our study uses panel data from deposit money banks in Nigeria over the period of interest. The fixed-effects model according to Ajibolade&Sankay (2013) is the primary method for controlling for omitted factors that vary across instances but remain consistent over time when it becomes necessary to analyze panel data. If the p-value is less than 5% (i.e., p-value 0.05), the decision criterion still applies: the H_0 must be rejected. The F-statistic (Wald-statistic) and P-value for fixed and random effect regression in this study, as seen in Table 4.4 above, propose that both models, as they are statistically significant below 5%, are appropriate for inference. However, it is not possible to use both the fixed and random effects at once.

The Hausman specification test helps to resolve which one to use. Specifically, as seen in Table 4.4 above, theHausman test result of 2.91 has a p-value of 0.5735 which implies that we fail to reject the $H_0$and accept the alternate hypothesis. This initially suggests that the study should use the results of the random effect panel regression as a basis for its conclusions and suggestions. The Breusch and Pagan Lagrangian Multiplier test (for serial correlation), also known as the LM test, is another model that is used to confirm the results of the Hausman specification test. The results of the LM test for random effects indicated that there may be serial correlation in the individual-specific effects, favoring the fixed effects model, with a value of 1.00 and a p-value of 0.0000. Hence, the study therefor adopts the Fixed effect regression technique for validating the hypotheses while the OLS regression is used as additional test.

Heteroskedasticity test

From Table 4.4 above, the result of the "Breusch-Pagan Godfrey test for heteroscedasticity" revealed a chi-square (χ^2) rate of 1.98with a p-value of 0.1589. This is above the significance threshold of 0.05 and implies that we reject the null hypothesis(H_0) and conclude that the population used is not heteroscedastic. The non-existence of heteroscedasticity in models demonstrates unequivocally that the variables in our sample are homogeneous.

Hypotheses testing

Following the above discussion, the fixed effect regression model as seen in column 2 of Table 4.4 above was used in this study for testing the study's hypotheses. Below is a specific analysis for each of the independent variables using the fixed effect regression model.

Hypothesis one

H_{01}: There is no significant effect of capital gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

The results obtained from the fixed effect regression model as shown in Table 4.4 (column 2) revealed that capital gearing ratio (CGR) in listed deposit money banks in Nigeria has a coef. of 1.837 and a p-value of 0.077 which is slightly above the significance threshold of 0.05. The result of 0.077 is an indication of a weak significant positive relationship between the independent and the dependent variables at 10% significance level and insignificant at 5% significance level. This implies that an increase in CGR, will lead to a proportionate increase in the dependent variable (NOCF) of the deposit money banks under study. However, our decision rule is to reject the null hypothesis where the p-value is less than 0.05 (5%).Consequently, since the p-value is 0.077 which is above 0.05, our decision rule suggests that we fail to reject the null hypothesis and conclude that there is no significant effect of capital gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

4.3.2 Hypothesis two

H_{02}: There is no significant effect of income gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

The results obtained from the fixed effect regression model as shown in Table 4.4 (column 2) revealed that income gearing ratio (IGR) in listed deposit money banks in Nigeria has a coef. of -0.392and a p-value of 0.613 which is above the significance threshold of 0.05 indicating an insignificant negative relationship between the independent and the dependent variables at 5% significance level. This implies that an increase in IGR, will lead to an insignificant decrease in the dependent variable (NOCF) of the deposit money banks under study. Our decision rule is to reject the null hypothesis where the p-value is less than 0.05 (5%).Consequently, since the p-value is 0.613 which is above 0.05, our decision rule suggests that we fail to reject the null hypothesis and conclude that there is no significant effect of income gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

Hypothesis three

H_{03}: There is no significant effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

Finally, the results obtained from the fixed effect regression model as shown in Table 4.4 (column 2) revealed that operating gearing ratio (IGR) in listed deposit money banks in Nigeria has a coef. of -0.013and a p-value of 0.009 which is below the significance threshold of 0.05 indicating a strong significant negative relationship between the independent and the dependent variables at 5% and 1% significance level. This implies that an increase in OGR, will lead to significant decrease in the dependent variable (NOCF) of the deposit money banks under study. The decision rule guiding the study is to reject the null hypothesis where the p-value is less than 0.05 (5%).Consequently, since the p-value is 0.009 which is below 0.05, our decision rule suggests that we reject the null hypothesis and conclude that there is a significant effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

Discussion of finding

Following the above discussion, the fixed effect regression model as seen in column 2 of Table 4.4 above was used in this study for testing the study's hypotheses. An examination of each independent indicator using a fixed effect regression model is provided thus:

The findings do not support the hypothesis one. The result suggests that an increase in CGR is associated with a proportionate increase in NOCF, but this relationship is not statistically significant at the conventional 5% level. Therefore, we fail to reject the null hypothesis, concluding that there is no significant effect of capital gearing ratio on net operating cash flows of quoted deposit money banks in Nigeria. This finding aligns with some prior studies in our empirical review. For instance, the study by Rugui & Omagwa (2018) on the cashflow performance of SMEs in Kenya found that financial constraints, financial illiteracy, and ownership structure had varying effects on performance, suggesting that the relationship between financial ratios and performance is nuanced. In this case, while there is a positive relationship between CGR and NOCF, it is not statistically significant, emphasizing the importance of considering various factors affecting the banking sector.

The result from hypothesis two also suggests that an increase in IGR leads to an insignificant decrease in NOCF.The result that there is no significant effect of income gearing ratio (IGR) on net operating cash flows (NOCF) in listed deposit money banks aligns with findings in studies such as Prabhakar (2018), which focused on the impact of credit financing on micro and small enterprises in Telangana. Prabhakar's study emphasized the importance of considering field-level reality and financial institutions' treatment of MSEs. Similarly, in the current study, the non-significant relationship between IGR and NOCF could be attributed to various contextual factors affecting deposit money banks in Nigeria.

Finally, the findings support the hypothesis three. The result suggests that an increase in OGR is associated with a significant decrease in NOCF as the result suggests that there is a significant effect of operating gearing ratio on net operating cash flows of selected quoted deposit money banks in Nigeria.

aligns with the study by Das (2017) on opportunities, issues, and challenges of MSMEs in India. Das highlighted the challenge of institutional credit financing and emphasized the crucial factor of easy and timely access to credit for the development and growth of enterprises. In this case, the significant negative relationship between OGR and NOCF suggests that as operating gearing increases, there is a significant decrease in net operating cash flows in selected quoted deposit money banks in Nigeria.

Conclusion

The current study delved into the intricate relationship between credit financing and cash flow performance within the context of selected quoted deposit money banks in Nigeria. The findings reveal that the impact of financial ratios on cash flow is multifaceted, mirroring the nuanced nature illuminated by previous empirical studies. While capital gearing ratio demonstrated a positive yet statistically insignificant effect, income gearing ratio exhibited an insignificant negative relationship with net operating cash flows. Notably, the study uncovered a significant negative association between operating gearing ratio and net operating cash flows, emphasizing the pivotal role of operational dynamics in shaping cash flow outcomes. These outcomes underscore the intricate interplay of financial structures on the performance of deposit money banks in Nigeria, offering valuable insights for policymakers, financial analysts, and banking professionals navigating the challenging landscape of credit financing and cash flow management.

Recommendations

Based on the above findings and conclusion, the study therefore makes the following recommendations:

i. **Capital structure evaluation:** Given the non-significant impact of capital gearing ratio on net operating cash flows, stakeholders should reassess the composition of capital structures within deposit money banks in Nigeria. A thorough examination of debt and equity proportions, considering the unique challenges and opportunities in the banking sector, may enhance financial decision-making and optimize cash flow performance.

ii. **Strategic financial planning:** In light of the non-significant effect of income gearing ratio on net operating cash flows, stakeholders are advised to adopt a meticulous approach to financial planning. Emphasizing diverse income streams, prudent investment decisions, and risk management practices can mitigate potential adverse effects on cash flow, contributing to the resilience and sustainability of selected quoted deposit money banks.

iii. **Operational efficiency enhancement:** Recognizing the significant impact of operating gearing ratio on net operating cash flows, stakeholders should prioritize initiatives aimed at improving operational efficiency, embracing technological advancements, and optimizing resource utilization can lead to a positive influence on cash flow, ensuring the financial robustness of selected quoted deposit money banks in Nigeria.

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