JOURNAL OF GLOBAL ACCOUNTING
10 (2) July, 2024.
ISSN (Online): 1597–7641; ISSN (Print): 1597-8273
https://journals.unizik.edu.ng/joga

CASH MANAGEMENT AND FINANCIAL PERFORMANCE OF INDUSTRIAL GOODS FIRMS IN NIGERIA

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CITATION: Moneke, G.N. & Ezeagba, C.E. (2024). Cash management and financial performance of industrial goods firms in Nigeria, *Journal of Global Accounting*, 10(2), 238 - 257.

Available:https://journals.unizik.edu.ng/joga

Key words: *Cash management, Cash and cash equivalent, Cash turnover and Return on assets*

ABSTRACT

This study ascertained the effect of cash management on the financial performance of industrial goods firms in Nigeria. The specific objectives of the study are to: determine the effect of cash and cash equivalent on the return on assets of industrial goods firms in Nigeria; and evaluate the extent to which cash turnover affects the return on assets of industrial goods firms in Nigeria. Research questions and hypotheses are formulated in line with the objectives of the study. Ex-Post Facto research design was adopted. The population of the study was consisting of twelve (12) industrial goods in Nigeria. Data were extracted from the companies of the study annual reports and accounts from 2013 to 2022. Analysis was carried out with descriptive statistics and regression analysis. The study revealed that there is a significant effect between cash and cash equivalent and return on assets of industrial goods firms in Nigeria. Also there is a significant effect between cash turnover and return on assets of industrial goods firms in Nigeria. The study therefore recommended among others that since the study found that cash and cash equivalent has a significant effect, therefore, management should endeavour to maintain the optimum balance between too much cash and too little cash in an organization to ensure its smooth operation and performance.

1. INTRODUCTION

Cash management is concerned with the management of cash flow in and out of the enterprise, cash flows within the enterprises and cash balance held by the firm at any point in time will be used to finance deficits (Divinah et al., 2021). In essence, the obvious aims of any enterprise are to manage its cash affairs in a way that cash balance is kept at a minimal level and to invest surplus cash in profitable opportunities (Pandey, 2011; Nwoye, Ezenwafor & Okoye, 2021). The adequacy of cash and other current assets, together with their efficient handling, determines survival or extinction of a business concern. Cash management is

concerned with managing cash (inflows and outflows). Kyomukama (2013) sees cash management as a broad term referring to the collection and disbursement of cash. Some sources of cash inflow include cash from operating activities, sale of business assets, and dividends received from other companies, while cash out flows include settling creditors, purchasing inventory, and payments for expenses (Festus, 2011). Cash and cash equivalents are a precondition to ensure that firms can meet their short-term obligations as they fall due while ensuring that profitability is not affected. Overall, cash management is crucial if corporations are to ensure sustained financial performance both in the short and long run.

For a business to run continuously, it must keep sufficient cash, neither more nor less, since cash shortage disrupt operations while excess cash will remain idle, and not contribute to the firm's profitability (ICAN study pack, 2009; Ezenwafor, Okegbe & Nwoye, 2021). Cash is the basic input required to keep a business afloat. A business might make profit, but may be forced to shutter, if it does not have sufficient cash to meet operational obligations. The firm's liquidity position is critical in pursuing sustained positive financial performance. Consequently, a large holding of current assets, significantly cash, strengthens the firm's liquidity (and reduces risks) but also reduces the overall profitability. For example, a firm may adopt an aggressive cash management policy with cash management practices that creates a low level of current assets as a percentage of total assets for its working capital. In this case, the firm is willing to adopt risky positions such as accommodating a longer debtor's collection period, a short creditor's payment period and lower cash flow margin and a longer cash conversion cycle. If all goes well, the returns in terms of profitability are usually high for firms adopting more risk (Dibie, 2022; Nworie, G.O. & Nwoye, 2023).

In other hand, financial performance is regarded as indicators that show the overall health of an entity. It indicates the extent to which strategies and policies of managers have been accomplished (Alslehat & Al-Nimer, 2017). It is a measure of assessment of a company’s ability to utilize its assets in the generation of profits as well as wealth maximization. Improvement in financial performance usually guarantees growth in terms of size of assets and other accounting parameters. In achieving growth in financial performance, greater efforts are usually devoted by managers in determining what to be done, how it should be done and when it should be done (Etim et al., 2022). Emekekwue (2008) sees return on assets (ROA) as a ratio which seeks to measure the firm performance, which is the amount of profit generated from the entire assets of the firm. It is express as Profit before tax Total Assets Ekwe and Duru (2012) opines that return on assets (ROA) was used as dependent variables,

because it is an indicator of managerial efficacy. ROA gives profitability on assets of the firm after meeting all expenses and taxes. It measures the profit of the firm after tax for each dollar invested in assets (Horne & Wachowicz 2005). It is an indicator of managerial performance.

The extant research on the issue of cash management measures (cash conversion cycle, creditor's payment period and cash flow margin) and firm profitability is still a very debatable and inconclusive area of research, and the findings of several studies in this area is still very much inconclusive and exhibits serious empirical disharmony indicating that the area is still very much an issue for consideration. For example, the study of Jonah, *et al* (2023) examined the relationship between cash management practices and financial performance of listed Breweries in Nigeria. Wokeh and Nmehielle (2023); Mmaduka et al. (2022) determined the effect of cash management on financial performance of listed agricultural firms in Nigeria from 2008-2020. Chibuike and Celestine (2022) investigated how cash flow management affected financial performance using data from Nigeria's pharmaceutical sector. Ekwunife and Okoro (2022) assessed the impact of cash flow on the corporate survival of manufacturing firms in Ghana and Nigeria over a five-year period (2013–2017). Etim et al. (2022) examined the influence of cash flow management on financial performance of selected listed companies in Nigeria. Dibie (2022) examined the impact of cash management on financial performance of quoted manufacturing firms in Nigeria. Amini et al. (2021) examined the impact of cash management practices toward financial performance of small and medium enterprises in Indonesia. Wanjuki et al. (2021) investigated the relationship between cash management and financial performance of private hospitals in Nairobi County, Kenya. Most of the related studies were conducted in the banking industry, service firms, consumer goods, agricultural firms, telecommunication industry, breweries, pharmaceutical firms, Oil and Gas companies, food and beverages and construction companies in Nigeria. This observed dearth of research on cash management and financial performance in Nigerian industrial goods, thereby create sectorial gap. Thus, in attempt to closing the earlier observed gaps in previous studies, this study seek to ascertain the effect of cash management on financial performance of industrial goods firms in Nigeria.

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ISSN (Online): 1597–7641; ISSN (Print): 1597-8273
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1.1 Objectives of the Study

The broad objective of this study is to examine the effect of cash management on the performance of industrial goods firms in Nigeria. The specific objectives of the study are:

1. to determine the effect of cash and cash equivalent on the return on assets of industrial goods firms in Nigeria.
2. to evaluate the extent to which cash turnover affects the return on assets of industrial goods firms in Nigeria.

1.2 Hypotheses

H_{O1}: There is no significant effect between cash and cash equivalent and return on assets of industrial goods firms in Nigeria.

H_{O2}: There is no significant effect between cash turnover and return on assets of industrial goods firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Cash Management

Cash Management is a broad term referring to cash collection, concentration and disbursement of cash for the purpose of running business operations. Cash management involves cash planning, managing the cash flows, setting the optimum cash level from time to time and investing surplus cash. Attom (2014) referred to cash as the basic input that keeps the business operational for the foreseeable future as well as the output realizable after the sale of products and services. Wesonga (2017) therefore defines cash management as the series of processes employed by a firm to obtain maximum benefits from the firms' flow of funds. Abioro (2013) opined that cash management is the ability of the firm having the right amount of money in the right place and time for purposes of meeting its financial obligations in the most effective of ways and ensuring positive cash flow for smooth operations. Attom (2014) therefore defined cash management practices as the techniques implemented by business enterprises/firms concerning cash flows and cash balances held at a time. Muthama (2016) on her part defined cash management practices as the process of ensuring good cash balances for businesses/firms to enable them remain going concerns. Businesses are required to maintain a balance between liquidity and profitability while conducting day to day operations. Liquidity is a precondition to ensure that firms are able to meet their short-term

obligations as they fall due and at the same time ensuring that profitability is maintained (Marus et al., 2019; Umenzekwe, Okoye & Nwoye, 2023).

2.1.2 Cash and Cash Equivalents

The term cash refers to the legal tender which includes; bills, coins, cheques received but not deposited, and checking and savings accounts. Mrefu and Gichure (2022) defined cash equivalents as any short-term investment securities maturing within 90 days which include bank certificates of deposit, banker's acceptances, treasury bills, commercial papers, and other money market instruments. Cash equivalents are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes. For an investment to qualify as a cash equivalent, it must be readily convertible to a known amount of cash and be subject to an insignificant risk of changes in value (Odo & Udodi, 2022). Therefore, an investment normally qualifies as a cash equivalent only when it has a short maturity of, say, three months or less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they are, in substance, cash equivalents; for example, preference shares of a company acquired shortly before their specified redemption date (provided there is only an insignificant risk of failure of the company to repay the amount at maturity). Cash flows exclude movements between items that constitute cash or cash equivalents because these components are part of the cash management of an enterprise rather than part of its operating, investing and financing activities. Cash management includes the investment of excess cash in cash equivalents.

2.1.3 Cash Turnover

The cash turnover is used to determine the proportion of cash required to generate sales. The ratio is typically compared to the same result for other businesses in the same industry to estimate the efficiency with which an organization uses its available cash to conduct operations and generate sales (Adebayo et al, 2011). Cash turnover is a comparison between sales and the average cash amount. Cash turnover rate is a measure of the efficiency of cash use carried out by the company. The efficient use of cash means companies have the opportunity to make greater investment in fixed investment that can be made in income. If the amount of cash is relatively small, it means high cash turnover so that the company is bankrupt (Mauchi et al, 2011; Ndungu & Oluoch, 2016). Cash turnover is a measure of the efficiency of cash used by companies because the cash turnover rate describes the speed of return of cash invested in working capital (Mauchi et al, 2011; Ndungu & Oluoch, 2016).

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2.1.4 Financial Performance

The concept of financial performance has over the decade been discussed in accounting and finance literature alike. Authors have expressed their views on this concept. Chibuike and Celestine (2022), asserts that financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It has also been the primary concern of business practitioners in all types of organizations since financial performance has implications for an organization's health and ultimately its survival. In the view of Verma (2021), financial performance is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure a firm's overall financial health over a given period of time and used to compare similar firms across the same industry. Performance evaluation is a necessity; and accepted measures are applied to consider different aspects in terms of limitation in operation and utilization of resources. The optimum operation of an enterprise is in the hand of managers; hence, incentivizing managers will lead to decisions that increase performance and accelerate achievement of an organizational goal (Reheman & Kiyayi, 2009). To improve overall corporate performance, appropriate level of cash should be determined to minimize risk and prepare for uncertainty. Financial performance improves with increase in efficient management.

2.2 Empirical Review

Jonah, Aaron and Jack (2023) examined the relationship between cash management practices and financial performance of listed Breweries in Nigeria. The study adopted the use of secondary panel data of 4 Breweries in the Nigeria Stock Exchange for a period of ten years (2012-2021). The study used ex-post facto research design. The study was anchored on the cost trade-off theory of liquidity. The analysis was done using least square regression aided by Statistical Package for Social Sciences (SPSS) Version 22.0. The results revealed a positive relationship between the cash conversion cycle and financial performance variables (NPM and ROCE) in listed Breweries in Nigeria. The study also found that creditor's payment period had a negative significant relationship with net profit margin and no relationship with return on capital employed.

Omaliko, Mordi and Okpara (2023) investigated the operating, financing, and investing activities were used as proxies for cash flow management. Net assets per share (NAPS) were used to measure firm performance while board independence was used as a proxy for the corporate governance mechanism (moderating variable). Panel least squares regression model operated with E-View 12 was utilized to perform the statistical test of parameter estimates,

and six hypotheses were formulated to direct the investigation. Ex Post Facto design was used, and the data for the study was collected from the published annual financial reports and accounts of companies listed Nigerian Exchange Group (NGX) under the consumer goods sector, industrial goods sector, and oil and gas sector. The results of the study show that operating activities (OA) significantly affect firm performance (NAPS) at 5% significant level. Furthermore, it was discovered that, at 1% significant level, financing activities (FA) has a positive and significant effect on firm performance, whereas investing activities (FA) has the same effect on firm performance in Nigeria.

Hoque (2023) checked out the effect of cash management on financial performance of commercial banks in Bangladesh. Tobin's Q is the proxy of financial performance of commercial banks in Bangladesh that also explained variable in current study. E-views 12 is used for analyzing the collected data. Result outline that value of the R Square (R2) is 0.3983 which means explanatory variables able to explain 39.83% variation of commercial banks performance (Tobin's Q) in Bangladesh. Cash flows from financing activities to total assets positively (0.045964) and year ended cash balance to total assets (0.361641) negatively impact on commercial banks performance in Bangladesh to what end are empirically noteworthy at 5% and 1% level successively. So researcher suggests that commercial banks in Bangladesh should prudently manage cash for uplifting their financial performance.

Wokeh and Nmehielle (2023) determined the effect of cash management on financial performance of listed agricultural firms in Nigeria. The study employed an ex-post facto research design. The study population was five (5) listed agricultural firms on the Nigerian Exchange Group (NGX). A sample size of five (5) agricultural firms was used using a census sampling technique covering ten financial years (2012 to 2021). The data used in this study were secondary sourced from annual reports and statement of accounts of the selected firms between 2012 and 2021. The method of data analysis is descriptive statistic, unit root test, diagnostics test and panel ordinary least square (OLS) with the help of E-view v12. The findings showed that there is a significant effect of cash and cash equivalent on return on assets, there is no significant effect of cash turnover on return on assets, there is no significant effect of cash and cash equivalent on return on equity and there is no significant effect of cash turnover on return on equity of listed agricultural firms in Nigeria.

Eta (2023) investigated the relationship between cash management and financial performance of listed construction companies on Nigerian Exchange Group. Specifically, the objectives of

the study are to examine the relationship between cash management and earning per share, ascertain the relationship between cash management and net profit. The study population comprised Six (6) listed construction companies as listed on the Nigeria Exchange Group in 2021. The entire population was used as the sample size, using the census approach. Data was source through the annual report of listed construction companies for 2011-2020. Pearson correlation and multiple regression was used in data analysis with the aid of Stata12 software. The study revealed that there is no relationship between cash management and earnings per share of listed construction companies on the Nigerian Exchange Group.

Mmaduka et al. (2022) ascertained the effect of cash conversion cycle on capital structure of quoted manufacturing firms in Nigeria from 2008-2020. Specifically, this study determined the effect of inventory turnover period, average collection period and average payment period on debt-to-equity ratio. Panel data were used in this study, which were obtained from the annual reports and accounts of fifteen (15) manufacturing firms for a thirteen year period spanning from 2008-2020. Inferential statistics using Pearson correlation coefficient, Heteroskedasticity test and Panel least square regression analysis were applied to test the hypotheses of the study. The results showed that inventory turnover period, average collection period and average payment period have a significant but negative effect on debt-to-equity ratio at 5% level of significance respectively.

Etim et al. (2022) aimed at examining the influence of cash flow management on financial performance of selected listed companies in Nigeria. Ex-post facto research design was adopted for the study using secondary data of sixty-three (63) selected listed companies in the Nigerian Stock Exchange (NSE) for the period 2013 to 2019. The nature of data was panel data. The dependent variable for financial performance is Return on Asset (ROA), while independent variables were cash flow management decomposed into Operating Cash Flow Margin (OCFM), Operating Cash Flow Ratio (OCFR), Investing Cash Flow Ratio (ICFR), Financing Cash Flow Ratio (FCFR) and Net Cash Flow Ratio (NCFR). The descriptive and inferential statistics were used for data analyses. Results showed that OCFM, OCFR, ICFR and NCFR had positive and significant influence on Financial Performance (ROA) and FCFR had a negative and insignificant influence on financial performance (ROA) of selected listed companies in Nigeria.

Dibie (2022) examined the impact of cash management on financial performance of quoted manufacturing firms in Nigeria. The cash management variables examined in the study

include cash conversion cycle (CCC), Creditors payment period (CPP), and Cash flow margin (CFM). The Arellano and Bond dynamic panel data estimation was employed in the analysis to address the potential effects of endogeneity in the relationship. The findings reveal that Cash conversion cycle has a positive and significant impact on financial performance, Creditors' payment Period (CPP) has a positive impact on the firm financial performance, which is significant at 5%. Furthermore, cash flow margin (CFM) positively impacts financial performance, which is also significant at 5%.

Ali *et al.* (2021) examined the alliance between cash management along with the financial performance of commercial banks in Nigeria. Researchers were found that cash flows of financing activities positively impact on financial performance of Nigerian banks which is statistically significant. Results outlined that holding cash significantly adverse effect on financial performance of sample Nigerian banks.

Omopariola et al. (2021) studied the level of financial performance of selected construction companies in South Africa. The study used 32 construction companies in South Africa, pragmatic approach was used and contractors with financial capacity and credibility of ≥ R 40 million, annual turnover of ≥ R 20 million, and available capital of ≥ R 40 million were selected purposively for the research. Parameters like total indirect cost, direct cost of work, total income and total revenue were obtained from the sample contractors to measure their financial performance. Post hoc Turkey's honest significant differences (HSD) were used to run the analysis. In their result, they concluded that there is no consensus on the indicators that measure a construction company's financial performance projects undertaken and there is a shortage of concepts on the financial performance indicators for construction companies in South Africa and indeed, the entire Africa continent.

Oluyemi and Chinyere (2021) studied the relationship between asset structure and financial performance of quoted construction companies in Nigeria. The study used secondary data from 2012 – 2018. The dependent variable of financial performance was measured using earning per share and return on asset while the independent variable of asset structure was measured by fixed asset and current asset. The proxies were measured using correlation test, unit root test using the Augmented Dickey Fuller (ADF) and simple regression using (Eview 11). The result was that fixed asset has a profitable and significant impact on return on asset. It also showed that current asset has a positive and significant impact on earnings per share.

Ebimobowei, Awuji, and Anuogwu (2021) determined the impact of cash flow accounting on the corporate financial performance of listed consumer goods companies in Nigeria from 2015 to 2019. Ex-post facto and correlational research design were adopted in the study. Descriptive, correlational, and panel ordinary least squares were used to analyze the data. The study found that while investing activities and financial leverage showed a negative and significant relationship, operating cash flow, financing cash flow, and firm size to profit after tax of listed consumer goods manufacturing companies revealed a positive and significant relationship.

Makoji, Orugun, and Adelakun, (2021) examined the relationship between cash flow management and business performance in Nigerian enterprises. A survey research design was adopted in the study. Regression analysis and the descriptive method were used to analyze the collected data. According to the study, cash flow management techniques have an impact on how well Abuja-based businesses perform as well as how well financial obligations are fulfilled. The study found that a company's ability to manage its cash flow is essential to its success.

Tonye, Emmanuel, and Stanley (2020) looked at the connection between cash flow and the performance of Nigerian consumer goods firms. Sixteen (16) consumer goods firms listed on the Nigerian Stock Exchange were surveyed for the study, and multiple regression techniques were used to statistically analyze the relevant data. The investigation demonstrated a strong positive correlation between the operating and investing cash flow and the performance of Nigerian companies in the consumer goods sector. Additionally, a significant and negative correlation was noted between financing cash flow and the performance of Nigerian companies in the consumer goods sector.

Onyando (2018) investigated cash management and financial performance of small and medium business enterprises in Kenya, using pecking order theory, trade-off theory and Keynes liquidity theory as baseline theories. The finding revealed a positive correlation between cash management and financial performance, likewise, cash planning and credit management showed a significant relationship with financial performance. The study concluded that cash management impact financial performance of small and medium business enterprises Kenya; and recommends that staff and management need to be trained on financial performance metrics for effective decision-making.

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Alslehat and AINimer (2017) analyzed the tie up between cash flow management together with the financial efficiency of Jordanian insurance companies. In Jordan, there were twenty-three insurance businesses in the population from 2009 to 2013. The research that net cash flows from operational and investment activities had positive effect on financial performance (return on assets) of insurance companies in Jordan.

3. MATERIAL AND METHOD

This study adopted *Ex-Post Facto* research design. The design is suitable because the researcher is interested in establishing the causal relationship among the dependent and independent variables. The population of the study comprised of twelve listed industrial goods firms in Nigeria. The details of the firms that constitute the population of the study are shown in appendix. Since the population size is not too large, this study will adopt the consensus sampling to adopt all the twelve (12) industrial goods firms for the study. The data for this study were obtained from secondary sources. Secondary data is information or data that has previously been collected and recorded for other purposes (Blumberg, Cooper, and Schindler, 2008). The data will extracted from the annual reports and accounts of the sampled firms in Nigeria. The statement of financial position and comprehensive incomes provided data used in computing the selected ratios from 2013-2022. The choice of this period is the year of mandatory adoption of IFRS for Nigeria (2013)..

For the purpose of examining the relationship between cash management and financial performance of listed industrial goods firms in Nigeria, the study adapts that of Muhammed (2015) which is presented below;

ROA = β0 + β1 CCC + β2 SIZE + β3 LEV + β4 GROWTH + β5 GDP + eit …… eqn 1.

PMit = *f*(CCC, CPP CFM **),** ……. . . . . . . eqn 2

The econometric model is presented thus;

PMit=β0+ β1 CCCit + β2 CPPit + β3 CFMit + eit ……. ……... eqn 3.

Where, PM = profit margin

CCC = cash conversion cycle

CFM= Cash flow margin

CPP = creditors payment period

e = error term

i= ith firm

t= time

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In line with the gap in knowledge established in this study, the model developed for the OLS regression analysis is stated below.

$ROA_{it} = \alpha_0 + \beta_1 CCE_{it} + \beta_{2t} FSZ + \varepsilon_{it}$ ……*eqn 4*

$ROA_{it} = \alpha_0 + \beta_1 CTO_{it} + \beta_2 FSZ_{it} + \varepsilon_{it}$ ……*eqn 5*

Where,

ROA_{it} = Return on Asset for firm i in period t.

CCE_{it} = Cash & cash equivalent for firm i in period t.

CTO_{it} = Cash turnover for firm i in period t.

FSZ_{it} = Firm size i in period t.

ε_{it} = error term for firm i in period t.

α_0 = constant.

$\beta_{1\text{-}2}$ = coefficients of the predictors

The data were analysed comparatively via both descriptive and inferential analyse. The descriptive statistics was first conducted in order to gain understanding of the sample characteristics as regards the selected variables. Inferential statistical analysis was carried out with the aid of E-Views 9.0 statistical software. These include the following:

*Coefficient of Correlation***:** which is a good measure of relationship between two variables, tells us about the strength of relationship and the direction of relationship as well;

*Panel Least Square (PLS) regression analysis***:** was used to predict the value of a variable based on the value of the other variables;

Decision Rule: At a significance level of 5%, the statistical significance of the analysis was evaluated using P-values (with an alpha of 0.05). When the P-value is lower than 5%, the null hypothesis is rejected and the alternative hypothesis is accepted. On the other hand, if the P-value is equal to or greater than 5%, the null hypothesis is accepted and the alternative hypothesis is rejected.

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4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Statistics

Table 1: Descriptive Statistics

	ROA	CCE	CTO	FSZ
Mean	-0.037621	3107.600	267307.0	1712429.
Median	-0.033649	1724.500	239241.5	1678897.
Maximum	0.003179	9650.000	667332.0	2379017.
Minimum	-0.082990	1057.000	0.000000	1302578.
Std. Dev.	0.028693	2666.375	228217.6	308035.6
Skewness	-0.106853	1.309315	0.427898	0.708281
Kurtosis	1.844243	3.843825	2.068896	2.872811
Jarque-Bera	34.53610	189.2314	39.98352	50.57060
Probability	0.000000	0.000000	0.000000	0.000000
Sum	-22.57283	1864560.	1.60E+08	1.03E+09
Sum Sq. Dev.	0.493138	4.26E+09	3.12E+13	5.68E+13
Observations	120	120	120	120

Source: E-View output, 2024

The descriptive statistics in table 1 revealed that the return on assets of the sampled firms is 0.037; the maximum of 0.003 with a minimum of -0.083 with a standard deviation of 0.029. The average cash & cash equivalent (CCE) from the sampled observations is 3107.6; standard deviation of 2666.4; a maximum observation of 9650.0 with a minimum value of 1057.0. The mean value of cash turnover (CTO) stood at 267307.0, a standard deviation of 1733284.0228217.6; maximum observation of 667332.0 with a minimum value of 0.000. The mean of firm size (FSZ) is at the average of 1712429.; standard deviation of 308035.6; a maximum observation of 2379017.0 with a minimum value of 1302578.0.

Skewness is the measure of how much the probability distribution of a random variable deviates from the normal distribution. Table 4.1 delineates that the probability distribution for CCE (0.000); CTO (0.000); CSR (0.000) and FSZ (0.000) are positively skewed distribution.

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4.2 Test of Hypotheses

4.2.1 Hypothesis 1

H_{O1}: There is no significant effect between cash and cash equivalent and return on assets of industrial goods firms in Nigeria.

Table 2: Panel Least Square Regression analysis testing the effect between ROA, CCE and FSZ

Dependent Variable: ROA

Method: Panel Least Squares

Date: 06/18/24 Time: 07:50

Sample: 2013 2022

Periods included: 10

Cross-sections included: 12

Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.069405	0.006777	-10.24077	0.0000
CCE	-1.68E-06	4.91E-07	-3.431839	0.0006
FSZ	2.16E-08	4.25E-09	5.088223	0.0000

R-squared	0.443528	Mean dependent var	-0.037621
Adjusted R-squared	0.440323	S.D. dependent var	0.028693
S.E. of regression	0.028108	Akaike info criterion	-4.300523
Sum squared resid	0.671673	Schwarz criterion	-4.278538
Log likelihood	1293.157	Hannan-Quinn criter.	-4.291965
F-statistic	13.58426	Durbin-Watson stat	2.782411
Prob(F-statistic)	0.000002		

Source: E-Views 9.0 Correlation Output, 2024

In Table 2, R-squared and adjusted Squared values were (0.444) and (0.440) respectively. The indicates that all the independent variables jointly explain about 44% of the systematic variations in performance of our samples companies over the ten years periods (2013-2022). Table 2 revealed an adjusted R^2 value of 0.44. The adjusted R^2, which represents the coefficient of the determinations imply that 44% of the total variation in the dependent variable, return on assets (ROA) of quoted industrial goods firms in Nigeria is jointly

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explained by the explanatory variables; cash & cash equivalent (CCE) and firm size (FSZ). The adjusted R^2 of 44% did not constitute a problem to the study because the F- statistics value of 13.58426 with an associated Prob.>F = 0.000 indicates that the model is fit to explain the effect expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. The value of adjusted R^2 of 44% also shows that 56% of the variation in the dependent variable is explained by other factors not captured in the study model.

Test of Autocorrelation: using Durbin-Waston (DW) statistics which we obtained from our regression result in table 2, it is observed that DW statistics is 2.782411 and an Akika Info Criterion and Schwarz Criterion which are 4.300 and 4.279 respectively also further confirms that our model is well specified. Table 2 indicates that cash & cash equivalent of firms have a negative significant effect on return on assets of listed industrial goods firms in Nigeria. This can be observed from the beta coefficient (β_1) of -1.680 with p value of 0.000 which is highly statistically significant at 5% level of significance.

Decision: Since the P-value of the test was 0.000 less than 0.05 (5%), this study upholds that there is a significant effect between cash and cash equivalent and return on assets of industrial goods firms in Nigeria. Thus, null hypothesis is Rejected and alternative hypothesis Accepted.

4.2.2 Hypothesis 2

H_{O2}: There is no significant effect between cash turnover and return on assets of industrial goods firms in Nigeria.

Table 3: PLS Regression analysis testing the effect between ROA, CTO and FSZ

Dependent Variable: ROA

Method: Panel Least Squares

Date: 06/18/24 Time: 07:51

Sample: 2013 2022

Periods included: 10

Cross-sections included: 12

Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.024182	0.012363	-1.956005	0.0509
CTO	4.36E-08	1.19E-08	3.655266	0.0003
FSZ	-1.47E-08	8.83E-09	-1.658674	0.0977

JOURNAL OF GLOBAL ACCOUNTING
10 (2) July, 2024.
ISSN (Online): 1597–7641; ISSN (Print): 1597-8273
https://journals.unizik.edu.ng/joga

R-squared	0.346009	Mean dependent var	-0.037621
Adjusted R-squared	0.342813	S.D. dependent var	0.028693
S.E. of regression	0.028072	Akaike info criterion	-4.303120
Sum squared resid	0.570449	Schwarz criterion	-4.281136
Log likelihood	1293.936	Hannan-Quinn criter.	-4.294562
F-statistic	14.39600	Durbin-Watson stat	2.023935
Prob(F-statistic)	0.000001		

Source: E-Views 9.0 Correlation Output, 2024

In Table 3, R-squared and adjusted Squared values were (0.346) and (0.343) respectively. The indicates that all the independent variables jointly explain about 34% of the systematic variations in performance of our samples companies over the ten years periods (2013-2022). Table 3 revealed an adjusted R^2 value of 0.34. The adjusted R^2, which represents the coefficient of the determinations imply that 34% of the total variation in the dependent variable (return on assets) of quoted industrial goods firms in Nigeria is jointly explained by the explanatory variables cash turnover (CTO) and firm size (FSZ). The adjusted R^2 of 34% did not constitute a problem to the study because the F- statistics value of 14.39600 with an associated Prob.>F = 0.000 indicates that the model is fit to explain the effect expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. The value of adjusted R^2 of 34% also shows that 66% of the variation in the dependent variable is explained by other factors not captured in the study model.

Test of Autocorrelation: using Durbin-Waston (DW) statistics which we obtained from our regression result in table 3, it is observed that DW statistics is 2.023935 and an Akika Info Criterion and Schwarz Criterion which are 4.303 and 4.281 respectively also further confirms that our model is well specified. Table 3 indicates that cash turnover of firms have a positive significant effect on return on assets of listed industrial goods firms in Nigeria. This can be observed from the beta coefficient (β_1) of 4.360 with p value of 0.000 which is highly statistically significant at 5% level of significance.

Decision: Since the P-value of the test was 0.000 less than 0.05 (5%), this study upholds that there is a significant effect between cash turnover and return on assets of industrial goods firms in Nigeria. Thus, null hypothesis is Rejected and alternative hypothesis Accepted.

CONCLUSION AND RECOMMENDATION

This study examined the effect of cash management on the performance of non-financial firms in Nigeria, using cash and cash equivalent, cash turnover and cash ratio as proxy for cash management while return on assets represent financial performance of industrial goods firms in Nigeria. Data for the study were extracted from annual accounts of the sampled firms. The hypotheses were tested and the study found that there is a significant effect between cash and cash equivalent and return on assets of industrial goods firms in Nigeria, and revealed that there is a significant effect between cash turnover and return on assets of industrial goods firms in Nigeria. The need to achieve the right balance between too much cash and too little cash in an organization give rise to management Concern for effective and efficient cash management because cash is the lifeblood of any business. The study concluded a significant relationship between cash management and the financial performance of listed industrial goods firms in Nigeria.

Based on the findings, the study recommended the followings;

1. The study found that cash and cash equivalent has a significant effect, therefore, management should endeavour to maintain the optimum balance between too much cash and too little cash in an organization to ensure its smooth operation and performance.
2. Since cash turnover was found significant, managers of the companies in Nigeria can create positive value for the wealth of shareholders by reducing the cash conversation cycle ratio to a minimum level. This can be done by improving the inventory control process and account receivable should be collected in line with the company debt policy.

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