

Cash Management Strategies and Financial Performance of Selected Quoted Industrial Goods Companies in Nigeria

Stella Peter ESSIEN

M.Sc. in View

Department of Accounting

Faculty of Management Sciences

Akwa Ibom State University, Obio-Akpa Campus, Nigeria.

stellapetereasy@gmail.com

Usen Paul UMO

Ph.D. in Accounting

Department of Accounting

Faculty of Management Sciences

Akwa Ibom State University, Obio-Akpa Campus, Nigeria.

umousen@yahoo.com

Abstract: Owing to seasonality and uncertainty, managers of industrial goods companies focus on core business issues and overlook some potentially serious and costly issues relating to poor cash management strategies (skills) and poor understanding of the cash flow cycle. This dissertation work examined cash management strategies and financial performance of manufacturing companies, using ten (10) quoted industrial goods companies listed in Nigeria Exchange Group from 2017-2021. In this study, cash balances, cash conversion cycle, and cash turnover are the cash management strategies proxies employed to examine their effect on financial performance. Financial performance is measured in terms of return on assets. The data was analysed using Ordinary Least Square (OLS) regression. It used ex post facto research design. The major findings of this study showed that cash balances strategy had a beta coefficient of 0.124. Highlight of the dissertation work revealed that the cash balances strategy insignificantly affects financial performance in the industrial goods companies in Nigeria. The result of the analysis revealed that cash conversion strategy had a beta coefficient of 0.118. This implies that the cash conversion strategy insignificantly affects financial performance in the industrial goods companies in Nigeria. From the result of the analysis also cash turnover strategy had a beta coefficient of 0.707. Accordingly, cash turnover strategy significantly affects financial performance of industrial goods companies in Nigeria. It was therefore concluded that cash management strategies jointly influence financial performance of industrial goods companies in Nigeria. Secondly, the cash balances and cash conversion strategies have insignificant influence on financial performance of industrial goods firms in Nigeria. Thirdly, cash turnover has significant positive influence on financial performance of industrial goods firms in Nigeria. It was recommended that the management of the industrial firms should reduce their cash balances as it insignificantly affects financial performance. More so the management of the industrial goods firms should improve on their cash conversion cycle as this affects financial performance and accept to increase their cash turnover as this will positively affect financial performance.

Keywords: Cash Management Strategies, Financial Performance, Quoted Industrial Goods

Introduction

Cash management strategies refer to the processes involved in skilfully minimizing the operating cash balance requirements of the firm. The strategies help in reducing the cash cycle and increasing the cash turnover. It is seen as the most basic liquid input required for keeping the business in its day to day activities and it doubles as the ultimate output expected to be realized by selling the services or products manufactured by the firm. Therefore, the management of cash is imperative in the life of every business enterprise. This is why cash is otherwise described as the life blood of any business. Generally, cash management strategies are based on cash conversion cycle, cash balances and cash holding. They constitute an important factor in enhancing the performance of companies. Cash management strategies show how efficient a firm is in its payment of bills, collection of payments and selling of inventories. The cash conversion cycle is a very powerful tool for examining how well an industrial goods company's working capital is being managed. In order to run the industrial goods companies for longer periods, management accountants make decisions to manage working capital by creating a balance between the available current assets and current liabilities. Basically today, proper cash management is significantly justified by the growing development in the business world over the years. Effective cash management involves better timing of expenditure decisions, earlier collection and banking of revenue, and more accurate forecasts of cash flows. This helps minimize the cost of any borrowing that is necessary and also facilitates the investment of surplus fund in order to achieve high returns. Cash management is a key component of efficient working capital management and is essential for the success of industrial goods firms. Particularly for the industrial good enterprises, the highest proportion of investments is in the inventory; hence they depend more on sales for revenue. Industrial goods companies incur expenses in acquisition of goods before corresponding payments is received from the customers.

However, sales vary due to seasonality and uncertainty. Therefore, cash from operations will determine the business financial power and the ability to run its activities successfully. As a result the business has to pay more attention to the timing of inflows and outflows to avoid running out of cash. This is achieved through proper cash management strategies. Financial performance is a subjective measure of how well a firm can use its assets from the primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period. Analysts and investors use financial performance to compare similar firms across the same industry or to compare industries or sectors in aggregate. This refers to the business success in the market, which may have different outcomes. It is assessed by measuring the success or failure of an organization in achieving its goals. Financial performance measurement is of significance to industrial goods companies as most of them operate with uncertainty. The financial performance measure for this proposed study is the Return on Assets (ROA). It is on the strength of the said background that the researcher reached a decision to study the impact of cash management strategies on the financial performance of quoted manufacturing firms using selected industrial goods companies in Nigeria as the organisations of study.

Statement of problem

Unfortunately, due to seasonality and uncertainty, managers of industrial goods companies focus on core business issues and undermine some potentially serious and costly issues associated with poor cash management strategies/skills and poor understanding of the cash flow cycle. However, if managers of industrial goods companies focus on cash management strategies/skills, this will lead to a sustainable development in business organizations. But these days proper attention is not given to the timing of cash inflows and outflows operations; for example, when to pay for accounts payable and purchase inventory.

During rapid growth, a company can end up running out of money because of over-purchasing of inventory, yet not receiving payment for it. This is because managers do not acquire the necessary skills. Some industrial goods companies are yet to develop strategies to optimize and manage the working capital. Industrial goods companies do not design and put in place proper frameworks to ensure that receivables are collected in time and payables are not paid more quickly than is needed. Managers in firms are yet to acquire the necessary skills. Thus they lack the ability to optimize and manage the working capital. In the literature of management accountants, much effort has been on long term investment and financing decisions. Studies have shown that although working capital has been considerably researched, very few studies have been conducted on cash management strategies which constitute an integral component of working capital management in firms (Nigerian business organisations inclusive). Previous academic studies have been largely focused on the manufacturing sector with very few study variables of interest. But the question is whether cash management improves or worsens the financial performance of selected industrial goods companies in Nigeria. Hence there is need for further research and this form the basis for this study.

Objectives of the study

The main objective of this study was to examine the relationship between cash management strategies and financial performance of selected quoted industrial goods companies in Nigeria. Specifically, the study sought:

- 1.To determine the relationship between cash balance strategy and return on asset of industrial goods companies in Nigeria.
- 2.To assess the relationship between cash conversion cycle strategy and return on assets of industrial goods companies in Nigeria.
3. To find out whether there is significant relationship between cash turnover strategy and return on assets of industrial goods companies in Nigeria.

4. To examine if cash balance strategy, relative to cash conversion cycle and cash turnover significantly influence return on assets of industrial goods companies in Nigeria

Research hypotheses

The following hypotheses were formulated for the study;

H₀₁: Cash balance strategy does not have any significant relationship with return on assets of industrial goods companies.

H₀₂: Cash conversion cycle strategy does not have any significant relationship with return on assets of industrial goods companies.

H₀₃: Cash turnover strategy does not have any significant relationship with return on assets of industrial goods companies.

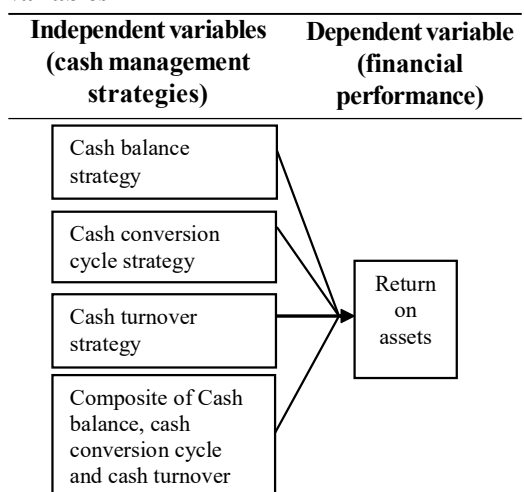
H₀₄: Cash balance strategy, relative to cash conversion cycle and cash turnover strategy, does not relate with return on assets of industrial goods companies.

Literature Review

This section presents the review of related literature to this study. Specifically, the chapter provides the theories of cash management, the various cash management strategies, empirical review, the conceptual framework and the operational framework of the study.

Conceptual framework

Figure 1: Diagrammatical representations of cash management and financial performance variables



Source: Researcher’s design (2023)

Cash and cash management

Cash is any medium of exchange, which is immediately negotiable. It must be free of restriction for any business purpose. Cash has to meet the prime requirements of general acceptability and availability for instant use in purchasing and payment of debt. Acceptability to a bank for deposit is a common test applied to cash items. This is a process of Planning, controlling, and accounting for cash transactions and cash balances. It is channelling available cash into expenditures that enhance productivity, directly or indirectly. In addition, Cash is ready money in the bank or in the business. It is not inventory, it is not accounts receivable (what you are owed), and it is not property. These might be converted to cash at some point in time, but it takes cash on hand or in the bank to pay suppliers, to pay the rent, and to meet the payroll. Profit growth does not necessarily mean more cash.

Finally, poor cash flow makes it difficult to hire and retain good employees. It is important to distinguish between true cash management and a more general subject of liquidity management. The distinction is a source of confusion because the word cash is used in practice in two different ways.

Cash management strategies

The cash management strategies is a process of minimizing the operating cash balance requirements of the firm. Thus the strategies help in reducing the cash cycle and increasing the cash turnover. Cash management practices refers to the management of an entity's cash to ensure that sufficient cash are sustained for entity's daily operations, finance opportunities and payments of unexpected services (Samuel & Peter, 2016). Cash management strategies are the adequate processes of collection, management, and usage of cash flows for the purpose of maintaining a decent level of liquidity, and it involves financial instruments such as treasury bills, certificate of deposit, and money market funds making the same substance for not just individuals but organizations too.

Major and Major (2020) defined it as the efficient collection, disbursement and investment of the organization's cash while meeting the firm's liquidity requirements. Cash management is concerned with the managing of cash flows into and out of the firm; cash flows within the firm; and cash balances held by the firm at a point of time by financing deficit or investing surplus cash (Yahaya, 2017).

Kaketo, Timbirimu, Kiizah and Olutayo (2017) observed that management and finance team need to enforce adherence to cash policy put in place to guide and control cash management. Murkor, Muturi and Oluoch (2018) observed that finance managers should come up with a compulsory cash flow policies to enable the organization come up with clear policies for cash flow management including the investment of surplus funds if need arise.

Cash balances

Cash is used in starting a business as well as in liquidating the same for its breakup value. It is made up of cash on hand and demand supplies while bank balance are short term highly liquid investment that are readily convertible to known amount of cash although subject to insignificant risks of changes in value (Onyeka, Nnado&Iroegbu, 2018). Cash and bank balances refer to the line item on the balance sheet that reports the value of a company's assets that are cash bank balances in CBN in the case of deposit money banks regulation. According to Charles and Fortune, (2019), cash and cash balances are assets saved in CBN for purpose of customers' savings protection. For simplicity, the total value of cash on hand includes items with a similar nature to cash.

According to Umo, (2022), the minimum cash balance is established by taking into consideration the basic safety cushion needed, minimum bank balance requirements, and the rate of daily cash collections and disbursements. Cash balances should be maintained at the lowest practical minimum because excess cash earns

nothing and loses purchasing power in period of rising prices.

Cash conversion cycle

Cash conversion cycle (CCC) means the whole yardstick of assessing the level of utilization of working capital in an organization. It can be described as the total number of days of sales outstanding (which is also termed average collection period) and the period of sales in days of inventory (also called inventory less period of payable in days outstanding (termed average payable period). Chuke, Elias and Ibe Lambert (2018) consider CCC as the calculation of the period it will take between payment and collection of cash. They maintained that CCC is the period of time, in days, that it takes for the cash to be collected after sales, determined from the time the firm finally made payment for goods. Farris and Nasseem (2013) opine that even though a firm can make loss within different accounting periods, it cannot continue to persistently operate with inefficient CCC management. Similarly, ICAN (2014) describe the cycle as the average period between payment to creditors in exchange for inventories and services delivered and cash receipt from customers for resale of the supplies or services. ICAN (2014) also enumerated the three main elements in the cash conversion cycle as: The mean period that inventory is held before it is used or sold; the average credit period taken from creditors and the mean length of credit time taken by (or given to) account receivables.

Cash conversion cycle is a very important component of working capital management and financial management because it directly affects the liquidity and profitability of the company. It deals with current assets and current liabilities. The traditional link between the cash conversion cycle and the firm's profitability is that shortening the cash conversion cycle increases firm's profitability (Mose, 2016).

Cash turnover

The cash turnover is used to determine the proportion of cash required to generate sale. 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, David and Samuel, 2011). Cash turnover is a comparison between sales and the average cash amount. Cash turnover rate is a measure of the efficiency of cash used to carried out by the company's operation. The efficient use of cash means companies have the opportunity to make greater investment in fixed investment that can be made in income (Onyekwelu, Chukwuani and Onyeka (2018). 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.

Cash Turnover is the amount of times a company has spent through its cash during the reporting period. Cash turnover is calculated based on a company's revenues over the average cash balance during that period. The cash turnover ratio (CTR) is profitability and efficiency ratio that measures how many times a company uses its cash to generate revenues. It measures the efficiency of a company to turn over its cash balance into sales revenue in an accounting period.

Financial performance

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period, and investors use financial performance to compare similar firms across the same industry or to compare industries or sectors in aggregate (Umo, 2022)

Financial performance is the measurement of the results of a company's policies wealth maximization and operations in monetary terms. Financial performance is mainly reflected in the computation of accounting ratios that suggested the relationship between numbers in the financial statement. They further stated that corporate

financial performance can be reflected in market-based (investor returns) and accounting-based (accounting returns) measures. Nwanyanwu (2015) stated that financial performance is used to evaluate the level at which an organization has succeeded in its line of business. Similarly, Charles and Uford (2023) mentioned that financial performance of an entity relates to the entity's ability and focus on economic resources available in a profitable manner and how well entity managed to generate considerable cash flows by consuming such resources. This information is presented in statement of comprehensive income, known as income statement and lastly, changes in financial position, means how business activities have affected the investor's stake in the entity (Oyadonghan, 2017). Rajkumar and Hanitha, (2015) stated that financial performance is a firm's ability to generate new resources from day-to-day operations over a given period of time, and it is measured as net income and cash from operation. For the purpose of this study financial performance is measured by return on asset.

Profitability

Profitability is the primary goal of all business ventures (Umo, 2022) Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important. Profitability is measured with income and expenses. Income is money generated from the activities of the business. For example, if crops and livestock are produced and sold, income is generated. However, money coming into the business from activities like borrowing money does not create income. Profitability is important and necessary for a company to survive and remain attractive to investors and analysts. According to Sartono, (2010), profitability is a company's ability to make profit related to sales, total assets, and capital. High profitability will support company's operational activities. It is impossible for a business to survive for a significant amount of time without making profit, therefore, measuring a company's profitability, both current and future, is critical in evaluating

the company (Inseng&Uford, 2019). There are several measures of profitability, such as Return on Investment (ROI), Return on Asset (ROA), and Return on Equity (ROE). Profitability in this study is measured using Return on Assets (ROA). According to Harggave (2019), return on assets (ROA) is an indicator of how a company generates profit is relative to its total assets.

Return on Assets

The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits. Since all assets are either funded by equity or debt, some investors try to disregard the costs of acquiring the assets in the return calculation by adding back interest expense in the formula.

It only makes sense that a higher ratio is more favorable to investors because it shows that the company is more effectively managing its assets to produce greater amount of net income. A positive ROA ratio usually indicates an upward profit trend as well. ROA is most useful for comparing companies in the same industry as different industries use assets differently (Uford, 2017). For instance, construction companies use large, expensive equipment while software companies use computers and servers.

Kasmir (2016) says ROA is a ratio that states the return on the number of assets utilized in the company. ROA serves to know the level of effectiveness of the company's overall operations. The larger the ratio, the better the company's profitability chances, because the company can use its assets effectively in bringing profit. Return On Assets (ROA) is a ratio that shows how much an asset plays in creating a net profit (Hery, 2015).

Relationship between cash management strategies (cash balance, cash conversion cycle and cash turnover) and financial performance

Empirical studies on cash management strategies and financial performance showed mix results based on various sectors, variable used, environment and context. For instance Ndirangu, (2017) conducted a study on the effect of cash management and performance of companies listed in Nairobi Security Exchange. Company sale was found to have a negative and insignificant effect on financial performance. Abioro (2013) established that a mere availability of cash (liquidity) without proper management does not necessarily translate into favorable financial performance. Kinyanjui, Kiragu and Kamau (2017) stated that, cash balances practices and use of technology in cash management has a relevant effect on financial performance of SMEs in Mogadishu. Mohamed and Omar (2016) cash management was found to have a high effect on financial performance of private secondary schools. Similarly, (Murkor, Muturi and Oluochi, (2018) found that operating cash flow management had significant and positive effect on return on assets and insignificant and positive effect on return on equity. A related study conducted in manufacturing firms in Srilanka found an insignificant relationship between cash ratio and financial performance and cash turnover ratio and financial performance (Janaki, 2016). Yousef (2016) also found that 67% of SMEs in Jordan had no knowledge about cash control procedures.

Cash turnover compares net sales and the average amount of cash. Rustina (2018) states that cash turnover show the ability of cash to generate income, so it can be seen how many times cash turn around in a given period. The higher the cash turnover, this means the higher the efficiency of the use of cash and the greater the finance obtained. The larger the amount of cash indicates the lower the rate of cash turnover. A safer cash turnover cycle will be detrimental to the company's profitability. Cash in a company does not have to be large, because a large amount of cash owned by a company can be said that a lot of cash is unemployed so that it can reduce profitability (Riyanto, 2016). According to Hadinata (2016) the rate of cash turnover has a

positive and significant effect on profitability. The same research results were also obtained by Indrayani (2016) and Andriani (2017). A one-way relationship is shown from the regression coefficient that the value of cash turnover increases then profitability will also increase, because with a high rate of cash turnover has shown that a high transaction volume, with a higher level of income will provide a large profit as long as operating costs are not increased. The increase in profit received will make the level of profitability increase.

Research Method

Research Design

The study adopts *ex post facto* research design based on the fact that the study relies on historical accounting data obtained from annual reports and accounts of the selected firms and it is conducted over five-year (2017-2021) period.

Population of the study

The target population used for this study consists of 13 quoted industrial goods companies that are listed on the floor of the Nigerian Exchange Group between 2017 and 2021, which are BUA Cement, Dangote Cement PLC, Lafarge Africa PLC, First Aluminium Plc, AustineLaz& Company Plc, Triple G & Company Plc, Notre Chemical Indus. Plc, Berger Paints PLC, Portland Paints, Premier Paints, CutixPlc, CAP Plc, and BETA Glass Plc.

Sample size and sampling technique

The sampling technique for this study is purposive sampling technique. The technique enhances selection of industrial goods firms that disclosed cash management strategies related information. The sample companies are: BUA Cement, Dangote Cement PLC, Lafarge Africa PLC, First Aluminium Plc, Berger Paints PLC, Portland Paints, Premier Paints, CutixPlc, CAP Plc, and BETA Glass Plc. This selection is based on the nature in which companies report on the cash management strategies and most importantly availability of the annual reports on the web over the period under study. The following include companies that met these criteria: **Berger Paints**

Nigeria Plc., BUA Cement Pl., DangoteCement, Lafarge Africa Plc., Premier Paints Plc., First Aluminium, Portland Paints Plc,

CutixPlc., Chemical & Allied Products(CAP), and BETA Glass Plc.

Sources and method of data collection

The researcher used secondary data as the main sources of data for the study. The data is obtained from audited and published financial statements of sample companies selected for the study. The other relevant information for this study was drawn from various books, journals, magazines, and websites.

Identification and measurement of the variable

Identification and measurement of the variable consists of dependent variable and independent variable.

Dependent variable

The dependent variable in this study is financial performance (FP) measured using return on assets (ROA). The return on asset (ROA) as it relates to financial performance (FP) is given in the following model.

$$FP_{kt} = ROA_{kt} \text{ ————— (1)}$$

Where:

FP_{kt} = The financial performance characteristics of financial reports for industrial goods firm k in year t
 ROA_{kt} = Return on assets for industrial goods firm k in year t

Independent variable

Cash management strategies form the independent variable and is measured using its components; cash balances strategies (CBS), cash conversion cycle strategies (CCC) and cash turnover strategies (CTS). Thus, the functional equation is stated as follows:

$$ROA_{kt} = f(CBS_{kt}, CCC_{kt}, CTS_{kt}) \text{ ————— (2)}$$

Where:

ROA_{kt} = The return on asset of financial reports for industrial good firm k in year t

CBS_{kt} = Cash balances strategy for industrial good firm k in year t

CCC_{kt} = Cash conversion cycle strategy for industrial good firm k in year t

CTS_{kt} = Cash turnover strategy for industrial good firm k in year t

e_t = Error term in year t.

Model specification

Multiple Linear Regressions

The linear model for multiple-regression is expressed as follows:

$$ROA_{kt} = \hat{a}_0 + \hat{a}_1 CBS_{kt} + \hat{a}_2 CCC_{kt} + \hat{a}_3 CTS_{kt} + e_t$$

Where:

$\hat{a}_1, \hat{a}_2, \hat{a}_3, \dots$ = coefficients

\hat{a}_0 = Constant

ROA_{kt} = Return on assets for industrial good firm k in year t

CBS_{kt} = Cash balances strategy for industrial good firm k in year t

CCC_{kt} = Cash conversion cycle strategy for industrial good firm k in year t

CTS_{kt} = Cash turnover strategy for industrial good firm k in year t

e_t = Error term in year t.

Descriptive and inferential statistical methods were used to analyse the data in the study. The descriptive statistics is used to evaluate the characteristics of the data: mean, maximum, minimum and standard deviation and also check for normality of the data. Multiple regressions technique is adopted as inferential statistics, to determine whether a relationship exists between the cash management strategies and financial performance of industrial goods companies in Nigeria. The data for the dependent and independent variables is extracted from the financial reports with the aid of Microsoft Excel software.

Table 2: Operationalization of the variables

Measures	Category	Abbreviation	Formula adopted for the study	Apriori Sign
Cash and bank balances	Independent variable	CBS	$\frac{\text{Cash and bank balances}}{\text{Current liability}}$	+/-
Cash conversion cycle	Independent variable	CCC	$\text{Inventory conversion period} + \text{debtors conversion period} - \text{payables conversion period}$	+/-
Cash turnover	Independent variable	CTS	$\frac{\text{Net revenue}}{\text{Cash and cash equivalent}}$	+/-
Return on assets	Dependent	ROA	$\frac{\text{Net profit}}{\text{total assets}}$	

Source: Researcher's compilation 2022)

Decision rule

The decision rule for this study is based on the sign and significance of the computed *t*-statistic from the regression output. If the p value of the *t* statistic $< .05$ (the chosen alpha level) the null hypothesis is rejected; alternate hypothesis accepted and, the variable is postulated to have a significant impact.

Limitations of the study

This study which used *ex post facto* research design was stark with limitation especially population which was subject to those that were listed on the floor of Nigerian Exchange Group and their financial report were published within the period under review.

Data Analysis

Data Presentation

The data required for this study were; cash balance, profit for the year, inventory, cost of

goods sold, sales, receivables, payables, and total assets. The data set were extracted from the annual reports of ten (10) listed manufacturing companies in Nigeria. The ten companies selected are firms belonging to block (group) of industrial goods companies listed on the Nigeria Exchange Group. These data were used to compute the variables of the study. The variables were cash balances strategy measured as cash and cash equivalent, cash conversion strategy measured as cash conversion cycle and cash turnover (independent variables) and financial performance measured as return on assets (dependent variable). The data computed variables are shown in (Appendix I).

Descriptive statistics of the variables

The descriptive statistics of the variables are presented in Table 4.1. The descriptive statistics were mean, median, maximum, minimum and standard deviation.

Table 3: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
CASH BALANCE(N'000)	50	94.0	168387000.0	22051111.100	46218344.3536
CASH CONVERSION CYCLE (Days)	50	-2081.6773	230.9986	-73.851610	383.6703808
CASH TURNOVER (Times)	50	.5023	977.7660	43.734968	142.5815782
ROA (%)	50	-139.4609	45.6314	8.711179	26.0979594
Valid N (listwise)	50				

Source: Researcher's Computation (2023)

The minimum cash balance of the selected quoted industrial goods companies for the period 2017-2021 was ₦94,000 while the maximum value was

₦168,387,000,000. The average cash at bank of the selected quoted industrial goods companies for the period was ₦22,051,111,100. The standard

deviation of cash at hand which shows the degree of dispersion was N462,183,443,536.

The minimum cash conversion cycle of the selected quoted industrial goods companies for the period 2017-2021 was -2,081.67 days while the maximum value was 230.99 days. The average cash conversion cycle of the selected companies for the period was -73.85 days. The standard deviation of cash conversion cycle which shows the degree of dispersion was 383.67 days.

The minimum cash turnover of the selected quoted industrial goods companies for the period 2017-2021 was 0.50 times while the maximum value was 977.76 times. The average cash turnover of the selected quoted industrial goods companies for the period was 8.71 times. The standard deviation of cash turnover which shows the degree of dispersion was 26.09 times.

The minimum return on assets of the selected quoted industrial goods companies for the period 2017-2021 was -139.46% while the maximum value was 45.63%. The average return on assets of the selected companies for the period was 8.711%. The standard deviation of return on assets which shows the degree of dispersion was 26.09%.

Test for assumptions of the least square regression model (OLS)

The various tests and analysis were carried out using a statistical package (SPSS) at 5% level of significance.

Test for Linearity

Table 3 represents the result of the test.

Table 3: Linearity Test

			Sum of Squares	df	Mean Square	F	Sig.
RESPONSE* FACTOR	Between Groups	(Combined)	18234445017274708	3	6078148339091569	11.382	.000
		Linearity	10940610142493126	1	10940610142493126	20.487	.000
		Deviation from Linearity	7293834874781582	2	3646917437390791	6.829	.000
	Within Groups		104670632392756352	196	53403383873852.8		
	Total		122905077410031056	199			

Source: Researcher’s Computation (2022).

This revealed that there exist a linear relationship between the dependent and the independent variables. This is true since the p- value of 0.000

was less than the significance level of 0.05 used in the test.

Test for Homogeneity of Variance

Table 4 presents the result of the test.

Table 4: Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
41.965	3	196	.000

Source: Researcher’s Computation (2022).

The table above showed that the variances are equal. The validity of the assumption holds because the Levene statistic of 41.965 was

significant at 5% level of significance (p-value Of 0.000<0.05).

Test for Normality

The result of the test is presented in Table 5 below.

Table 5: Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df		Statistic	Df	
RESPONSE	.451	200	RESPONSE	.230	200	.000

Source: Researcher’s Computation (2022)

The two test statistic; Kolmogorov-Smirnov and Shapiro-Wilk were significant at 5% level of significance since the p-values for both statistic were less than 0.05 hence, the error terms

associated with the variables were normally distributed.

Test for Autocorrelation

The result of the test is presented in Table 6 below.

Table 6: Model Summary and Auto-correlation^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.832 ^a	.692	.672	14.94336	1.844

a. Predictors: (Constant), CTS, CBS, CCC

b. Dependent Variable: ROA

Source: Researcher’s Computation (2022)

From the table above, the Durbin-Watson statistic of 1.844 was observed. It is necessary to note that the Durbin-Watson statistic of below 2.00, 2.00 and above 2.00 signifies the presence of

positive autocorrelation, no auto correlation and negative autocorrelation. Hence, 1.844 by approximation means that there exists no serious autocorrelation,

Test for Multicollinearity

The result of the collinearity test is as captured in Table 7 below.

Table 7: Regression Coefficients and Collinearity Statistics^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	CBS	.855	1.170
	CCC	.688	1.454
	CTS	.725	1.380

Source: Researcher’s Computation (2022)

Using the Variance Inflation Factor(VIF), it noticed that the VIF values were all less than 5 which is the accepted region for the absence of collinearity. Values above 10 implies a stronger degree of collinearity among the independent variables which means the variables are dependent. Hence, the independent variables

used in this work are truly independent in relation to the dependent variable.

Test of Hypotheses

The research hypotheses were tested in this section of the study. The test was carried out using Ordinary Least Square Regression with the model specification shown below using SPSS software.

Table 8: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.838 ^a	.703	.683	14.6911481	.917

a. Predictors: (Constant), CASH BALANCE, CASH CONVERSION CYCLE, CASH TURNOVER

b. Dependent Variable: ROA

Source: Researcher’s Computation (2022)

Table 9: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	23445.898	3	7815.299	36.210	.000 ^b
	Residual	9928.172	46	215.830		
	Total	33374.071	49			

a. Dependent Variable: ROA

b. Predictors: (Constant), CASH BALANCE, CASH CONVERSION CYCLE, CASH TURNOVER

Source: Researcher’s Computation (2022)

Table 10: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.280	11.271		0.114	0.910		
	CASH BALANCE	2.261	1.761	0.124	1.284	0.206	0.693	1.442
	CASH CONVERSION CYCLE	0.008	0.006	0.118	1.301	0.200	0.786	1.272
	CASH TURNOVER	0.129	0.020	0.707	6.615	0.000	0.567	1.765

a. Dependent Variable: ROA

Source: Researcher's computation (2022)

Hypothesis One

H_{01} : Cash balance strategy does not have any significant relationship with return on assets of industrial goods companies.

H_{11} : Cash balance strategy has significant relationship with return on assets of industrial goods companies.

The null hypothesis one states that cash balance strategy does not have any significant relationship with return on assets of selected industrial goods companies in Nigeria. Based on the decision rule of the study, the null hypothesis one of the study is accepted and the alternative rejected because the p-value of 0.206 shown in Table 4.9 is greater than 0.05. The null hypothesis is further accepted because the t-cal value of 1.284 is less than the critical value of t which was 2.000. Therefore, cash balance strategy does not have any significant relationship on return on assets of selected industrial goods companies in Nigeria.

Hypothesis Two

H_{02} : Cash conversion cycle strategy does not have any significant relationship on return on assets of industrial goods companies.

H_{12} : Cash conversion cycle strategy has significant relationship with return on assets of industrial goods companies.

The null hypothesis two states that cash conversion cycle strategy does not have any significant relationship on return on assets of selected industrial goods companies in Nigeria. Based on the decision rule of the study, the null

hypothesis two of the study is accepted and the alternative rejected because the p-value of 0.200 shown in Table 4.9 is greater than 0.05. The null hypothesis is further accepted because the t-cal value of 1.301 is less than the critical value of t which was 2.000. Therefore, Cash conversion cycle strategy does not have any significant relationship on return on assets of selected industrial goods companies in Nigeria.

Hypothesis Three

H_{03} : Cash turnover strategy does not have any significant relationship with return on assets of industrial goods companies.

H_{13} : Cash turnover strategy has significant relationship with return on assets of industrial goods companies.

The null hypothesis three states that cash turnover strategy does not have any significant relationship with return on assets of selected industrial goods companies in Nigeria. Based on the decision rule of the study, the null hypothesis three of the study is rejected and the alternative accepted because the p-value of 0.000 shown in Table 4.9 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 6.615 is greater than the critical value of t which was 2.000. The alternative hypothesis H_{13} is accepted. Therefore cash turnover strategy significantly influence return on assets of selected industrial goods companies in Nigeria.

Hypothesis Four

H_{04} : Cash balance strategy, relative to cash conversion cycle and cash turnover strategy, does not relate with return on assets of industrial goods companies.

H₁₄: *Cash balance strategy, relative to cash conversion cycle and cash turnover strategy, relate with return on assets of industrial goods companies.*

The null hypothesis four states that cash balance strategy, relative to cash conversion cycle and cash turnover strategy, does not relate with return on assets of industrial goods companies. Based on the decision rule of the study, the null hypothesis four of the study is rejected and the alternate accepted because the p-value of 0.000 shown in Table 4.8 is less than 0.05. The null hypothesis is further rejected because the F-cal value of 36.21 is greater than the critical value of F which was 2.80. Therefore, cash balance strategies, relative to cash conversion cycle and cash turnover strategy significantly relates with return on assets of selected industrial goods companies in Nigeria.

Discussion and Findings

The result of the analysis of hypothesis one indicates that cash balances strategy does not have any significant relationship with return on assets of selected industrial goods companies in Nigeria. The result of the analysis showed a beta coefficient for cash balance of 0.124 which implies that 12.4% of the variation in financial performance is accounted for by cash balance strategy. The positive influence shows that the larger the volume of cash kept, the more likely for the firm to make profit. This finding suggests 12.4% of times that an industrial goods firm in Nigeria makes profit, the profit can be attributed to cash balances strategy.

The result of the analysis of hypothesis two indicates that cash conversion cycle strategy does not have any significant impact on return on assets of selected industrial goods companies in Nigeria. The result of the analysis showed a beta coefficient for cash conversion cycle of 0.118 which implies that 11.8 % of the variation in financial performance is accounted for by cash conversion cycle the positive influence shows that the larger the cash conversion cycle, the more likely for the firm to make loss. This finding

suggests 11.8% of times that an industrial goods firm in Nigeria makes profit, the profit can be attributed to cash conversion cycle.

The result of the analysis of hypothesis three indicates that cash turnover strategy have significant impact on return on assets of quoted industrial goods companies in Nigeria. The result of the analysis showed a beta coefficient for cash turnover of 0.707 which implies that 70.7% of the variation in return on assets is accounted for by cash turnover strategy. The positive influence shows that the better the cash turnover strategy, the more likely for the firm to make profit. This finding suggests 70.7% of times that industrial goods companies in Nigeria makes profit, the profit is attributed to cash turnover strategy. The finding is in line with the finding of Oladipupo and Okafor (2013) examined the implications of a firm's working capital management practice on its profitability and dividend payout ratio. The study focused on the extent of effects of working capital management on Profitability and Dividend Payout Ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria Stock Exchange over a 5 year period (2002 and 2006). Using both the Pearson product moment correlation technique and ordinary least square (OLS) regression technique, they observed that shorter net trade cycle and debt ratio promote high corporate profitability.

The result of the analysis showed an adjusted R-squared of 0.683 for the analysis. This implies that 68.3% of the variation in return on assets is accounted for by cash balance strategy, cash conversion cycle and cash turnover strategies. This implies that the composite influence of cash management strategies on profitability is 68.3% in the industrial goods sector of Nigeria.

Summary, Conclusion and Recommendations

This section focuses on the summary of findings, conclusion and recommendations. It also provides suggestions for further studies as well as the business implications of the findings.

Summary of findings

The following were the major findings of the study;

- i. Based on the result of the analysis, cash balances strategy had a beta coefficient of -0.124. This implies that the cash balances strategy insignificantly affects financial performance in the manufacturing firms in Nigeria. This result is in contrast with Major and Azali (2022) their study found that, there is a positive and significant relationship between cash and bank balance and return on equity in deposit money banks in Nigeria.
- ii. Based on the result of the analysis, cash conversion cycle strategy had a beta coefficient of 0.118. This implies that the cash conversion strategy insignificantly affects financial performance in the manufacturing firms in Nigeria which is in-line with Uwuigbe, Uwalomwa and Egbi (2011), The results of the empirical findings showed that there is a strong negative relationship between cash conversion cycle and profitability of the firms. In contrast with Kabiru, Aliyu and Usman (2019) Findings from the study revealed that cash conversion cycle has a negative significant relation with return on equity whereby positive significant relationship where found with return on Assets. The overall analysis indicates that cash conversion cycle (CCC) is positively and significantly related to the profitability of food and beverage companies in Nigeria. As CCC reduces, ROA rises. Thus, CCC has a significant positive effect on ROA.
- iii. Based on the result of the analysis, cash turnover had a beta coefficient of 0.707. This implies that the cash turnover strategy significantly influence financial performance in the manufacturing firms in Nigeria in effect of cash turnover ratio on return on assets (H1), the results showed that the cash turnover variable had a significant effect on ROA. In contrast with Eryatna, Nurafni and Handayawati (2021) the results showed that Cash turnover partially does not have significant effect on profitability:

- iv. The result of the analysis showed an adjusted R-squared of 0.683 for the analysis. This implies that the composite influence of cash management strategies on profitability is 68.3% in the industrial goods sector of Nigeria.

Conclusion

Based on the result of the analysis it is concluded that cash balances strategy and cash conversion strategy relatively insignificant relationship on financial performance of industrial goods firms in Nigeria. But cash turnover strategies have positively and significant influence on financial performance of industrial goods firms in Nigeria. Based on the result of the analysis it can be concluded that cash management strategies jointly influence financial performance in manufacturing firms in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are considered worthwhile;

- i. The management of the industrial goods firms should reduce their cash balances as this insignificantly affects financial performance.
- ii. The management of the industrial goods firms should improve on their cash conversion cycle strategy as this will improve financial performance by reducing the time frame during which cash is tied down within the firms and also managers can create value by reducing the number of day's accounts receivables and inventory conversion ratio to a reasonable minimum.
- iii. The management of the industrial firms should promote their cash turnover as this will significantly raise financial performance in Nigerian companies.

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