
Responsiveness of Operational Performance to Liquid Asset Management of Industrial Goods Firms in Nigeria

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ABSTRACT: *The study examined the responsiveness of operational performance to liquid asset management of industrial goods firms in Nigeria. Inventory, cash and cash equivalents, and account receivables formed the independent variables of the study. While profit for the year was used to measure operational performance. The study adopted an ex-post-facto research design, covering the period between 2011 and 2020. Secondary data were extracted from annual reports and accounts of sampled industrial goods firms listed on Nigeria Exchange Plc. Multiple regression techniques (fixed-effect model) was used for the data analysis. In line with the specific objectives of the study which was to ascertain the effect of inventory, cash and cash equivalents, and account receivables on profit for the year of industrial goods firms in Nigeria, it was revealed that inventory and cash and cash equivalents have a negative and significant effect on profit for the year of industrial goods firms in Nigeria. Account receivables have a positive and insignificant effect on profit for the year of industrial goods firms in Nigeria. This implies that non of the independent variables have a significant effect on the operational performance of industrial goods firms in Nigeria. It is recommended therefore that industrial goods firms should strive to reduce the rate at which they sell their inventory at a loss. They should devise a means to resist sell pressures caused by importations. The government should also help in protecting the firms within these industries by placing importation embargos on industrial goods. Industrial goods firms should reduce the amount of cash and cash equivalents they hold. They should strive to reduce the idle cash at their disposal. Such cash should be invested into the business that will yield good returns. They should always strive to increase their account receivables because of the positive effect it has on operational performance.*

KEYWORD: inventory, cash and cash equivalents, account receivables, profit for the year, Nigeria

INTRODUCTION

Background of the Study

Performance is the bottom line for every organization, business and non-business alike. It is essential because non-performance can spell failure. This study, however, focuses on the financial performance of firms. The question this study attempts to answer is whether the corporate assets could affect the financial performance of a firm? Financial performance is a subjective measure of how well a firm can use assets from its primary and non-primary modes

of business and generate revenues (Investopedia, 2015). The term, financial performance, is also used as a general measure of a firm's overall financial health over a given period and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Financial performance refers to the act of performing a financial activity. In a broader sense, financial performance refers to the degree to which financial objectives are being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms.

For a firm to perform financially, it must have some inputs in the form of assets. According to the business dictionary, an asset is something valuable that an entity owns, benefits from, or has use of, in generating income. The corporate asset was described as the lifeblood of every firm by Flanagan (2005), who also emphasized that the primary task of every manager is to keep current assets flowing and use the cash flows to generate profits. Assets keep a business afloat. According to Investopedia, (2015) it is a resource with economic value that an individual, corporation or country owns or controls with the expectation that it will provide a future benefit.

In many organisations, physical assets are the foundation for success and future growth. The effective management of these assets is essential to the overall success of such organisations. However, assets do not necessarily entail physical assets. Going by the definition of assets, it is anything that accrues returns for its use or possession. For industrial goods firms in Nigeria, just like every other organization to remain in business, it has to effectively pursue the management of its assets. Asset management is the practice of increasing total wealth over time by acquiring, maintaining, and trading investments that have the potential to grow in value. Asset management has a double-barrelled goal: increasing value while mitigating risk (Ganti, 2021).

In addition, liquid assets are an asset that can easily be converted into cash in a short amount of time. Liquid assets include things like cash, money market instruments, and marketable securities. Both individuals and businesses can be concerned with tracking liquid assets as a portion of their net worth. For financial accounting, a company's liquid assets are reported on its statement of financial position as current assets. The liquid current assets are cash, marketable securities, accounts receivable and inventory.

Statement of the Problem

To cope with the changes in the environment, industrial goods firms have been forced to effectively manage their liquid assets to mitigate various risks that arise due to mismatch between their assets and liabilities that is loans and advances of the firm. Liquid asset management is an essential tool for monitoring, measuring and managing the market risk of a firm. Proper management of assets ensures the smooth and efficient functioning of the industrial goods sector in a manner that accommodates changes in the external environment. Firms' success greatly depends on the assets at their disposal. This explains the reason firms strive to acquire more assets. With these assets in place, the firm's activity level will be high and the objectives can as well be achieved. In a situation where these corporate assets are lacking in a firm, their operations will be adversely affected, thereby affecting their market

value. Again, a lack of proper coordination of the existing corporate assets will be harmful to firms.

There are 12 industrial goods companies registered under the manufacturing sector of the Nigerian stock exchange. These companies specialize in the production of building materials, electronic and electrical products, packaging/containers, as well as tools and Machinery. Despite the ever-increasing demand for their products, about a third of the companies are still struggling to survive with at least a quarter reporting negative returns in the past five consecutive years. Consequent to the important role this industry plays in building the economy through various ways (taxes, employment, infrastructure) and since enough attention has not been paid to the sector by researchers based on the responsiveness of their operational performance to their liquid assets the current study becomes imperative.

Consequently, the current study examined the responsiveness of operational performance to liquid asset management of industrial goods firms in Nigeria. To find out how the management of their liquid assets such as inventory, cash and cash equivalents, and receivables had contributed to the poor performances of most of the firms in the industrial goods industry. The main objective of the study was to evaluate the responsiveness of operational performance to liquid asset management of industrial goods firms in Nigeria. The specific objectives are as follows, to:

- i. Ascertain the effect of Inventory on profit for the year of industrial goods firms in Nigeria.
- ii. Evaluate the effect of cash and cash equivalents on profit for the year of industrial goods firms in Nigeria.
- iii. Determine the effect of receivables on profit for the year of industrial goods firms in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Framework

Liquid Assets

The liquidity of an asset is its capacity to be converted to cash without considerable loss. Cash, MMFs, and marketable securities are liquid assets. Both individuals and businesses can track liquid assets as part of their net worth. In financial accounting, liquid assets are current assets. A liquid asset is cash on hand or an asset that can be easily converted to cash. Liquidity is king since legal tender is cash. Assets that can be converted to cash rapidly are like cash since the owner can easily get cash in a transaction. Liquid assets are typically considered as cash and dubbed cash equivalents since the owner is convinced they can be converted to cash at any time.

Orshi et al. (2016) define liquidity as a firm's ability to turn current assets into cash for better performance. A liquid asset must have various factors. It must be in a liquid market with lots of buyers. Transferring ownership must be easy and secure. The time to cash out varies. The most liquid assets are cash and securities that can be sold for cash. Companies might also consider assets with a cash conversion expectation of one year or less liquid. A company's current assets are its liquid assets. It expands liquid assets to include accounts receivable and

inventory. Overall, liquid assets are particularly significant for individuals and businesses since they are the initial source of cash utilised to meet payment obligations (Chen, 2021).

Inventory

Inventory is retained for future production and/or sales. Value is a valuable idle resource. Inventory is the value or quantity of raw materials, supplies, work in progress (WIP), and finished stock preserved or stored for use as needed. Steel and lumber are raw materials for finished products. Supplies include items like Maintenance, Repair, and Operating (MRO) inventory. Work in progress is partially made materials. Finished goods are shipped items (Kothari, 2011).

Inventory management is the art and science of managing stock levels of a particular group of items at the lowest cost consistent with management's goals (Jessop, 1999). Managers of inventory-handling organisations must satisfy client needs while minimising inventory costs. Inventory costs include keeping, ordering, and shortage, says Drury (2004). Holding costs are the costs of having physical items in stock. These include insurance, obsolescence, and opportunity costs connected to inventory. Costs of ordering and receiving inventory are called ordering costs. Determine how much is needed, prepare invoices, transport costs, and examine goods. When demand exceeds inventory, shortage costs result. The costs include lost costs, customer goodwill, late costs, and others.

Cash and Cash Equivalents (CCE)

Cash is paper or coins used to exchange products, debt, or services. In a company, cash is often maintained in the form of saved bank deposits. Gill and Shah (2012) defined cash holding as investment-ready cash. Usually, on the statement of financial condition, cash and cash equivalent consist of cash on hand, bank account, marketable securities, deposits and others. Cash holdings are easily convertible cash or cash equivalents, according to Ogundipe et al (2012). According to them, cash holding will encompass cash in hand and bank, short-term investment in money market instruments such as treasury notes.

CCE are the most liquid assets on a company's balance sheet. Cash equivalents are short-term, easily convertible agreements with idle cash. An investment counts as a cash equivalent if it matures in 90 days or less and involves little risk of asset value fluctuations from the date of acquisition. If it has a maturity of more than 90 days, it is not considered a cash equivalent. Unless they're essentially cash equivalents (such preferred shares with a short maturity and recovery date), equity investments aren't cash equivalents (Dennis, 2013). Cash flow is one of a company's key health metrics. So, a corporation with relatively high net assets and much less cash and cash equivalents can largely be considered a signal of non-liquidity. Cash and cash equivalents are "low risk, poor return" investments for investors and companies. Analysts can predict a company's ability to pay payments quickly by comparing CCE and current liabilities. Nevertheless, this can happen only if there are receivables that can be converted into cash instantly (Dennis, 2013). (Dennis, 2013).

The cash holding consists of cash and highly liquid assets with a three-month maturity (Gill & Shah, 2012). Cash holding ratio is cash and cash equivalents to total assets (Vijayakumaran &

Atchyuthan, 2017). Cash holding is not a firm's purpose, but it helps ensure output, impacts investment decisions, and affects performance and value. Researchers study cash holdings.

Receivables

The accounts receivable period is defined as the interval between the sale of inventory and the collection of receivables (Ross, Westerfield and Jordan, 2008). Receivable turnover is an important indicator of a company's efficiency in conducting its financial tasks. The Receivable Turnover (RT) ratio gives information on the firm's receivables and how successful it is in collections. This ratio is derived by dividing receivables by net credit sales for the year (Van-Horne & Wachowicz, 2008). Horne and Wachowicz (2008) submit that receivable turnover could reveal very useful information, however the ratio primarily tells us how many times accounts receivable were turned over (converted into cash) during the year. The shorter the period between a normal sale and cash collection, the larger the turnover. Furthermore, the receivables turnover ratio reveals how frequently receivables resolve, that is, are received and collected on average during the year (Subramanyam & Wild, 2009).

Profit for the year (PFY)

The widely used earnings per share metric is both popular and somewhat deceptive (De-Wet, 2013). For a long time, the study explained, pundits in the know and other users of financial statements who may not be as well informed have touted earnings per share (EPS) as the holy grail of financial performance. Theoretically, the firm's financial purpose should be to maximise shareholder wealth, as reflected in the market value of the firm's shares (Balaputhiran, 2014). According to Balaputhiran, if the market value of the company's shares is a function of earnings per share, then maximising earnings per share will result in the greatest feasible price for the company's shares.

Theoretical Framework

The study was anchored on Liquidity Asset Theory by Mitchel, W. F. (1923). The theory focuses on the asset side of the statement of financial position and contends that banks must retain a large quantity of liquid assets against possible demand or a payment cushion of readily marketable short-term liquid assets against unforeseen circumstances (Abbang-Anoh, 2012). This theory, however, may place banks in a position where they have an excess liquid asset, which may reduce return on asset as cash sits idle in the vault in anticipation of unforeseen circumstances. Ngwu believes that in today's volatile money market, this strategy is prohibitively expensive.

This theory gives the fact that the banking sector can be caught off guard by unforeseen circumstances, so it emphasises that banks should hold a large amount of liquid assets that are readily marketable in the short term so that they can always respond appropriately and reasonably to unforeseen circumstances (Ngwu, 2006). This points to the importance of sufficient liquidity management; yet, banks should be careful not to hoard cash in their vaults that would otherwise have been invested in the form of loans and advances, as this gives commercial banks' potential to profit. Thus, this theory emphasises proper liquidity planning and structure to guarantee that banks are not caught off guard by unforeseen events while performing their day-to-day obligations to their clients. All of these ideas are critical for any bank's risk and liquidity management in order to ensure sustainable performance growth in the Nigerian economy.

Empirical Review

Mohsin, Muhammad, and Salman (2019) examined the effects of working capital management on the performance of non-financial firms in Pakistan, including inventory management, receivable management, and payable management. From 2000 to 2016, panel data from 280 nonfinancial firms registered on the Pakistan Stock Exchange were analysed. Firms' profitability was proxied by return on assets and return on equity, whilst sales, growth, and asset growth were employed to measure growth. The results of the multiple regression indicate that inventory management has an impact on company growth and payable management has a significant impact on firm profitability. Only receivable management, however, has an impact on both profitability and growth.

Inyiama, Ugbor, and Chukwuani (2017) investigated the relationship between the growth rate of assets and the financial performance of Nigerian manufacturing firms. Six (6) firms were chosen from the twenty-two (22) manufacturing firms registered on the Nigeria Stock Exchange Market (NSE), and secondary data was collected from the firms during a ten-year period (2006 – 2015). Using Pearson Product Moment Correlation Matrix and Multiple Regression, the results show that non-current assets growth rate and net assets growth rate of manufacturing firms in Nigeria are positively and strongly related to profit for the year of the firms for the period of 2006 - 2015, whereas current assets growth rate is positively and weakly related to profit for the year of the firms for the period.

Olaoye, Adekanbi, and Oluwadare (2019) investigated the relationship between working capital management and business profitability in Nigerian firms listed on the Nigerian Stock Exchange (NSE). A panel data methodology with multiple regression estimators was utilised to evaluate this relationship based on a balanced panel of 10 listed firms from 2008 to 2017. The cash collection and cash payment periods were discovered to have a negative impact on return on assets, albeit the impact was only significant for the cash payment period. It was also discovered that both the current ratio and the inventory period had a beneficial impact on return on assets.

Akparhuere, Duru, and Ogbu (2019) investigate the effect of asset management efficiency on the corporate performance of Nigerian building and construction firms. Three particular objectives were developed to achieve the main goal. These include investigating the effects of asset, inventory, and working capital turnover on profit after tax (a proxy for performance). The study used an ex-post facto research approach, and secondary data on the independent and dependent variables were collected for ten (10) years, from 2006 to 2017. The data was analysed using the basic regression method, and it was discovered that net asset turnover and working capital turnover had no significant effect on the performance of Nigerian building and construction firms. Inventory turnover, on the other hand, had a substantial effect on the corporate performance of Nigerian building and construction firms.

Muhindo and Rwakihembo (2021) examined the relationship between inventory management and the financial performance of private hospitals in Western Uganda. To collect data from 32 private hospitals in Western Uganda, the study used a positivist methodology and a cross-sectional research design. The study collected data using a closed-ended questionnaire and

analysed the data using simple linear regression. Inventory management was found to be a major predictor of private hospital financial performance in Western Uganda.

Rosmita (2020) used secondary data from 74 sample manufacturing companies to investigate the impact of profitability, liquidity, firm size, and leverage on cash holding in manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2018. In this study, a regression analysis of panel data with a fixed-effect model was employed as the analytical strategy. The findings of this study reveal that profitability, liquidity, and leverage all have a favourable effect on cash holding, while business size has no effect.

Onyeka, Nnado, and Ugwuanyi (2020) examined the relationship between business size, profitability, and the quantity of cash and cash equivalents of selected Nigerian Stock Exchange-quoted industrial firms. Data were compiled from the audited annual reports of thirty-seven (37) manufacturing firms from 2005 to 2018. Granger Causality Wald Tests are used to evaluate hypothetical propositions. These results imply that in order to maximise firm profits, the optimal liquidity-profitability trade-offs must be struck; otherwise, firms with insufficient liquid assets may be compelled to borrow from external sources at excessive firms or become illiquid.

Doan (2020) examined the impacts of the cash holding ratio on the performance of Vietnamese firms listed from 2008 to 2018. The study made use of regression analysis. The proportion of cash held has a beneficial impact on firm performance, according to the author. The study also examines the impacts of financial leverage, the ratio of tangible assets, firm size, and sales growth on business performance. Furthermore, this is the first study in Vietnam to indicate that state ownership has a positive and statistically significant impact on firm performance. Thus, good state capital management can improve business performance. The results of this study give a solid foundation for finance managers to make proper cash holding decisions in order to improve firm performance.

Koroleva, Jigeer, Miao, and Skhvediani (2021) examined the relationship between internal and external factors of state-owned commercial banks' profitability. The study applied pooled regression, fixed effect, and random effect models on the top five Chinese state-owned commercial banks from 2007 to 2019. The results reveal that internal characteristics such as size, credit quality, and liquidity have a strong beneficial influence on bank profitability.

Agbata, Nzewi, and Uchegbu (2021) examined the effect of cash holdings on the financial performance of Nigerian listed manufacturing enterprises. The study's population comprised of 21 consumer goods firms listed on the Nigerian Stock Exchange as of December 31, 2018. In hypothesis testing, multiple regression analysis was used. According to the study, there is a strong inverse relationship between cash to book value of assets and net profit margin. Cash to book value of assets has no significant effect on net profit margin (NPM) ($p > 0.5$); cash to book value of the asset has no significant effect on gross profit margin (GPM) ($p > 0.5$); and cash to book value of the asset has no significant influence on Tobin's Q ($p > 0.5$).

Abbas and Isiaka (2021) investigated the impact of working capital management on the financial performance of non-financial companies listed on the Nigerian Stock Exchange from

2014 to 2018. The study included 71 companies from the NSE's ten non-financial categories. The data was obtained from the Nigerian Stock Exchange 2019 Factbook. The Pooled Ordinary Least Squares, fixed effect, and random-effect approaches were used to estimate the model. Account Receivables were found to be negatively associated to EPS.

Mab & Makoni (2019) evaluated the period between working capital management and financial performance of 12 South African listed food and beverage companies from 2007 to 2016. This study collected secondary data for Johannesburg Stock Exchange (JSE) listed businesses from the Iress McGregor databases. The study discovered a favourable relationship between the inventory conversion period (ICP) and business profitability using correlation approaches. Furthermore, the study discovered an inverse relationship between the average collection period (ACP) and profitability. Furthermore, the study discovered a favourable relationship between the average payment period (APP) and profitability.

Olaoye, Akintola, and Ogundipe (2019) examined the impact of working capital management on the profitability of selected publicly traded Nigerian manufacturing firms between 2006 and 2015. The study relied on secondary panel data. The results revealed that the Account collection period (ACP), Account payment period (APP), and Inventory Turnover in Days (ITID) all have a negative effect on the Net Operating Profitability of Nigeria's publicly traded manufacturing enterprises.

Uguru, Chukwu, and Elom (2018) examined the effect of working capital management on the profitability of Nigerian brewing firms. The data in this study was analysed using the Ordinary Least Square (OLS) regression technique and an *ex-post-facto* research design. The data indicate that managing the number of days account receivables remain outstanding, the number of days inventory is held, and the cash conversion cycle are important elements in achieving the profitability goal of brewery firms in Nigeria.

Gap in Empirical Literature

The foregoing empirical review indicates that not so much works have been done to evaluate the effect of liquid asset on the operational performance of industrial goods firms in Nigeria. The review also shows that none of the studies has a period that ended in 2020. The majority of the period ended in 2016, making the current study the most recent. Also, none of the studies made use of these variables combined, which also created a research gap. The study will be the only study among the reviewed study that ascertained the responsiveness of operational performance to liquid assets of industrial goods firms in Nigeria.

METHODOLOGY

Research Design

The study adopted *Ex Post Facto* research design. The study adopted an *ex-post-facto* design because it relied on historical data. The study made use of secondary data of extracted annual reports and accounts of sampled industrial goods firms listed on Nigeria Exchange Plc. The study purposively selected four industrial goods firms listed on Nigeria Exchange Plc. The selected firms are Lafarge Wapco Nigeria Plc, Berger Paints Nigeria Plc, Beta Glass Nigeria

Plc and Dangote Cement Plc. Availability of relevant and complete data for the period under study was also a key factor in selecting the sample of four firms.

Method of Data Analysis

For data analysis, the multiple regression techniques were applied on a panel data series to test the hypotheses. The signs of the coefficients were used to describe the direction and strength of the effect of the explanatory variables on the dependent variable, while the t-statistics and p-value were used to determine the magnitude of the effect between the variables, x and y in the collection of our data series. The model for this study was specified as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \dots\dots\dots (Eq1)$$

This can explicitly be represented as thus:

$$PFY = a + \beta_1 INV + \beta_2 CAC + \beta_3 AR \dots\dots\dots (Eq2)$$

Where:

PFY	Profit for the year
INV	Inventory
CAC	Cash and Cash Equivalentents
AR	Account Receivables

DATA ANALYSIS

Table 4.2.1: Descriptive Statistic

	PFY	INV	CAC	AR
Mean	68579957	17092833	19656999	7766438.
Median	4616092.	6392294.	8070829.	7956511.
Maximum	29837395	67736000	41698854	26255784
Minimum	-13223626	459526.0	8087.000	106220.0
Std. Dev.	1.20E+08	20171475	28242589	6807658.
Skewness	-4.213153	-0.230708	-0.145524	-0.638691
Kurtosis	24.09665	1.709556	1.862145	1.769952
Jarque-Bera	860.1191	3.130254	2.299041	5.241210
Probability	0.000000	0.209061	0.316789	0.072759
Sum	2.74E+09	6.84E+08	7.86E+08	3.11E+08
Sum Sq. Dev.	5.61E+17	1.59E+16	3.11E+16	1.81E+15
Observations	40	40	40	40

Source: Eviews 10.0 Software

Table 4.2.1 above reveals the variable description of the 40 observations of the panel data for sampled industrial goods firms in Nigeria. From the table, the industry minimum values are Profit for the Year: -₦13223626; Inventory: ₦459,526; Cash and Cash Equivalentents: ₦216,689; and Account Receivables: ₦106,220. However, the industry maximum are Profit for the Year: ₦481,456,000; Inventory: ₦67,736,000; Cash and Cash Equivalentents: ₦108,980,000; and Account Receivables: ₦26,255,784. The industry mean values for the variables studied are Profit for the Year: ₦68,579,957; Inventory: ₦17,092,833; Cash and Cash Equivalentents: ₦19,656,999; and Account Receivables: ₦7,766,438.

The normality of the distribution of the data series is shown by the coefficients of Skewness, Kurtosis, and Jarque-Bera Probability. From Table 4.2.1, the probability of the Jarque-Bera Statistics for all the explanatory variables except Profit for the Year (0.000000) have a nonsignificant p-value as follows, Inventory (0.209061), Cash and Cash Equivalents (0.316789), and Account Receivables (0.072759). The nonsignificance of the p-values depicts a normal distribution for all the variables except Profit for the Year. This is further confirmed by the skewness coefficients which is less than one in all the variables under study except Profit for the Year. The kurtosis coefficient also provides a second level of confirmation that all the explanatory variables except Profit for the Year (24.09665) are normally distributed with Inventory (1.709556), Cash and Cash Equivalents (1.862145), and Account Receivables (1.769952).

Table 4.2.2: Correlation Analysis

	LOGPFY	LOGINV	LOGCAC	LOGAR
LOGPFY	1.000000	0.266004	0.253168	0.151771
LOGINV	0.266004	1.000000	0.924455	0.770121
LOGCAC	0.253168	0.924455	1.000000	0.708116
LOGAR	0.151771	0.770121	0.708116	1.000000

Source: Eviews 10.0 Software

Table 4.2.2 indicates that a weak and positive relationship exists between Profit for the Year and Inventory. Cash and Cash Equivalents and Profit for the Year have a positive and weak relationship among the variables under study. Account Receivable and Profit for the Year has a positive and weak relationship among the variables under study. This implies that none of the variables can be used to predict changes in profit for the year of industrial goods firms in Nigeria.

Table 4.2.3: Regression Result

Dependent Variable: LOGPFY

Method: Panel Least Squares

Date: 01/17/22 Time: 17:08

Sample: 2011 2020

Periods included: 10

Cross-sections included: 4

Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGINV	-3.966897	2.985577	-1.328687	0.1931
LOGCAC	-0.700344	1.236629	-0.566333	0.5750
LOGAR	0.901632	1.533149	0.588092	0.5605
C	74.42123	30.03780	2.477586	0.0185
Effects Specification				

Cross-section fixed (dummy variables)

R-squared	0.303011	Mean dependent var	14.97359
Adjusted R-squared	0.176286	S.D. dependent var	5.708130
S.E. of regression	5.180625	Akaike info criterion	6.285357
Sum squared resid	885.6829	Schwarz criterion	6.580911
Log-likelihood	-118.7071	Hannan-Quinn criter.	6.392220
F-statistic	2.391085	Durbin-Watson stat	2.224577
Prob(F-statistic)	0.049864		

Source: Eviews 10.0 Software

Inventory: Inventory has a coefficient of -3.966897 which shows that a unit increase in Inventory decreased the Profit for the Year of the country by 3.97. The value of the t-statistics ($1.328687 < 2$) and the probability of t-Statistic ($0.1931 > 0.05$) shows that Inventory has a nonsignificant effect on Profit for the Year of industrial goods firms in Nigeria.

Cash and Cash Equivalents: Cash and Cash Equivalents has a coefficient of -0.700344 which shows that a unit increase in Cash and Cash Equivalents decreased the Profit for the Year of the country by 0.70. The value of the t-statistics ($0.566333 < 2$) and the probability of t-Statistic ($0.5750 > 0.05$) shows that Cash and Cash Equivalents have a nonsignificant effect on Profit for the Year of industrial goods firms in Nigeria.

Account Receivable: Account Receivable has a coefficient of 0.901632 which shows that a unit increase in Account Receivables increased the Profit for the Year of the country by 3.97. The value of the t-statistics ($0.588092 < 2$) and the probability of t-Statistic ($0.5605 > 0.05$) shows that Account Receivables has a nonsignificant effect on Profit for the Year of industrial goods firms in Nigeria.

Statistical Criteria (First Order Tests)

The value of the Adjusted R^2 is 0.176, which tells us that 17.6 per cent of the variations in the Profit for the Year are explained by the independent variables, while the other 83.4 per cent are explained by other factors other than Inventory, Cash and Cash Equivalents, and Account Receivables. These other factors are contained in the error term. The f-test is used to check for the overall significance of the model and if the value of the probability of the f-stat (p-value: 0.049864) is less than 0.05 at a 5% critical value, the model is said to be significant and statistically fit. The Durbin Watson Statistic shows the presence of positive autocorrelation in the time series data.

Test Of Hypotheses

The three hypotheses formulated in section one of this study were tested using the following decision rule:

Statement of Decision Rule: Reject the null hypothesis (H_0) if the P-value is less than 0.05, t-statistic is > 2 , otherwise accept the null hypotheses.

Hypothesis one state that Inventory does not significantly affect Profit for the Year of industrial goods firms in Nigeria.

Decision: Table 4.2.3 reveals a P-Value of 0.1931 which is > 0.05 ; H_0 is therefore accepted. This implies that Inventory has a nonsignificant effect on profit for the year of industrial goods firms in Nigeria.

Hypothesis two state that Cash and Cash Equivalents does not significantly affect Profit for the Year of industrial goods firms in Nigeria.

Decision: Table 4.2.3 reveals a P-Value of 0.5750 which is > 0.05 ; H_0 is therefore accepted. This implies that Cash and Cash Equivalents has a nonsignificant effect on profit for the year of industrial goods firms in Nigeria.

Hypothesis three states that Account Receivables does not significantly affect Profit for the Year of industrial goods firms in Nigeria.

Decision: Table 4.2.3 reveals a P-Value of 0.5605 which is > 0.05 ; H_0 is therefore accepted. This implies that Account Receivables has a nonsignificant effect on profit for the year of industrial goods firms in Nigeria.

DISCUSSION OF FINDINGS

Inventory and Operational Performance

The test of hypothesis one revealed that inventory has a negative and nonsignificant effect on profit for the year of industrial goods firms in Nigeria. The result is not scary because most of these firms are forced to sell at loss because of importations from abroad. the more you deplete inventories by selling them, the lower your gross profits will be. The result is in line with the findings of Duru (2014), and Olaoye, Akintola, and Ogundipe (2019) who found a negative relationship between inventory and profitability. However, Uguru, Chukwu, and Elom (2018); Akparhuere, Duru, and Ogbu (2019); Mab and Makoni (2020); Olaoye, Adekanbi, and Oluwadare (2019); and Muhindo and Rwakihembo (2021) found a positive relationship between inventory and profitability. The cause of the difference could be because of the disparity in the industry and geographical locations studied.

Cash and Cash Equivalents and Operational Performance

The test of hypothesis one revealed that cash and cash equivalents have a negative and nonsignificant effect on profit for the year of industrial goods firms in Nigeria. The result is not out of scale because when cash is held and not invested, profit will reduce. The result is in line with the findings of Abbas and Isiaka (2021) and Doan (2020) who found a negative relationship between Cash and Cash Equivalents and profitability. However, Agbata, Nzewi and Uchegbu (2021) found a positive relationship between Cash and Cash Equivalents and profitability. The cause of the difference could be because of the disparity in the industry and geographical locations studied.

Account Receivables and Operational Performance

The test of hypothesis one revealed that Account Receivables have a positive and nonsignificant effect on profit for the year of industrial goods firms in Nigeria. The result is not out of scale because when cash is held and not invested, profit will reduce. The result is in line with the findings of Abbas and Isiaka (2021) who found a negative relationship between Account Receivables and profitability. However, Mohsin, Muhammad, and Salman (2019) and Duru (2014) found a positive relationship between Account Receivables and profitability. The

cause of the difference could be because of the disparity in the industry and geographical locations studied.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The findings of this research work are summarized as follows:

- i. Inventory has a negative and nonsignificant effect on profit for the year of industrial goods firms in Nigeria.
- ii. Cash and cash equivalents have a negative and nonsignificant effect on profit for the year of industrial goods firms in Nigeria.
- iii. Accounts receivables have a positive and nonsignificant effect on profit for the year of industrial goods firms in Nigeria.

Conclusion

The study evaluated the responsiveness of operational performance to liquid asset management of industrial goods firms in Nigeria. From the data analysis using Ordinary Least Square multiple regression techniques, it was found that Inventory and Cash and Cash Equivalents have a negative and nonsignificant effect on Profit for the Year of industrial goods firms in Nigeria. However, Account Receivables have a positive and nonsignificant effect on Profit for the Year of industrial goods firms in Nigeria. The study also reveals that about 17.6% of changes in profit for the year could be explained by the variables under study, the remaining 83.4% can be explained by other variables not studied. Therefore, the study concludes that non-explanatory variables exert a significant effect on the operational performance of industrial goods firms in Nigeria. The following are hereby recommended:

- i. Industrial goods firms should strive to reduce the rate at which they sell their inventory at a loss. They should devise a means to resist sell pressures caused by importations. The government should also help in protecting the firms within these industries by placing importation embargos on industrial goods.
- ii. Industrial goods firms should reduce the amount of cash and cash equivalents they hold. They should strive to reduce the idle cash at their disposal. Such cash should be invested into the business that will yield good returns.
- iii. They should always strive to increase their account receivables because of the positive effect it has on operational performance.

Contribution to Knowledge

An important dimension of every research work is how that work contributed to the body of knowledge. From the empirical review, it is obvious that not so much works have been done to evaluate the effect of liquid asset on the operational performance of industrial goods firms in Nigeria. The review also shows that none of the studies has a period that ended in 2020. The majority of the period ended in 2016, making the current study the most recent. Also, none of the studies made use of these variables combined, which also created a research gap. The study to the best of the researcher's knowledge will be the only study among the reviewed study that ascertained the responsiveness of operational performance to liquid assets of industrial goods firms in Nigeria. Hence, made a huge contribution to knowledge.

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APPENDIX I

LIST OF INDUSTRIAL GOODS FIRMS IN NIGERIA

Company	Ticker	Date Listed	Date Incorporated
AUSTIN LAZ & COMPANY PLC	AUSTINLAZ	-	July 13, 1982
BERGER PAINTS PLC	BERGER	-	September 1, 1959
BETA GLASS PLC.	BETAGLAS	July 2, 1986	June 2, 1974
BUA CEMENT PLC	BUACEMENT	January 9, 2020	May 30, 2014
CAP PLC	CAP	May 24, 1978	September 21, 1965
CUTIX PLC.	CUTIX	August 12, 1987	November 4, 1982
DANGOTE CEMENT PLC	DANGCEM	October 26, 2010	November 4, 1992
GREIF NIGERIA PLC	VANLEER	-	January 20, 1940
LAFARGE AFRICA PLC.	WAPCO	February 17, 1979	February 24, 1959
MEYER PLC.	MEYER	-	May 20, 1960
NOTORE CHEMICAL IND PLC	NOTORE	August 2, 2018	November 30, 2005
PREMIER PAINTS PLC.	PREMPAINTS	March 7, 1995	August 24, 1982
TRIPPLE GEE AND COMPANY PLC.	TRIPPLEG	-	April 14, 1980