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NEXUS BETWEEN FIRMS-SPECIFIC CHARACTERISTICS AND CASH HOLDING OF LISTED MANUFACTURING FIRMS IN NIGERIA

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Abstract
This paper aims at shedding light on the empirical relationship between cash holding and firm characteristics. The population of the consist of 51 manufacturing firms listed on the Nigeria Stock Exchange, while the adjusted population of 35 firms was arrived based on availability of data. Correlational research design was adopted. The study was anchored on pecking order theory. Multiple regression was employed to analyse data extracted from annual report of selected manufacturing firms in Nigeria from the period of 2012 to 2019. The result of the findings shows that profitability and networking capital have positive and significant relationship on corporate cash holding. However, negative and significant relationship was found between leverage and corporate cash holding. In line with the findings, the study therefore recommends that managers of Nigerian manufacturing firms should develop a good strategy for earning high returns from their assets since this has positive significant effect on cash holdings. They should avoid holding excessive cash reserves as this might attract scrutiny from the capital markets. There should be an optimal trade-off approach to cash holdings, and also there should be a hierarchy explanation for holding excess cash.

Keywords: Cash-Holding, Pecking Order Theory and Firm characteristics

Introduction

Cash is very important to the going concern of the firm. This is very crucial to the going concern of the firm reason being that cash and cash equivalent are liquid

assets meant to increase shareholders value by investing in profitable engagements, drastically minimize cost, and the peculiarity of cash not overlooked.

Cash hold, according to Gill and Shah (2012), is defined as cash available or available to invest in tangible assets and distribute them to investors. Cash possession is therefore considered cash or equivalent and can easily be converted into cash to. In this context, cash withholding will include cash in the fund, bank and short-term investment in money market instruments such as treasury bills. Owing to the significance of cash and its importance in working capital management, different approaches are being used to determine factors that influence it.

The corporate cash holding determinants have since been a subject of explanation in the framework of three theories, namely: The Trade-off Model, Pecking Order Theory and Free Cash Flow Theory. According to tradeoff theory, they set their optimal level of cash holding by weighing the marginal costs and marginal benefits of holding cash (Afza & Adnan, 2007).

According to trade-off theory and pecking order theory, various firms' characteristics such as growth opportunities, cash lows, liquid assets, leverages and size are determinant of cash holding. As per the pecking order theory, Myers (1984) opines that firms finance investments firstly with retaining earnings, then with safe debt and risky debt, and finally with equity. When current operational cash flows are sufficient enough to finance new investments, firms repay debt and accumulate cash. When retained earnings are not enough to finance current investments, firms use the accumulated cash holdings and, if needed, issue debt while free cash flow theory as explained by Jensen (1986) that managers have an incentive to hoard cash to increase the amount of assets under their control and to gain discretionary power over the firm investment decision. With the cash holding, they do not need to raise external funds and could undertake investments that have a negative impact on shareholders' wealth.

The fallout of his submission has foreclosed the necessity of maintaining optimum cash holding. Pandey (2006) emphasizes that firm should maintain optimum cash holding. How to determine the optimum cash holding is a major concern for the financial manager globally Nigeria inclusive. Efforts have been on to identify what are the determinants of cash holding bearing in mind the firm's

characteristics such as leverages, profitability, net working capital, CAPEX. Hence, this study examines the correlation relationship between the cash as dependent variable and firms' characteristic as explanatory variables.
Companies tend to hold excess cash to make sure that they can invest when cash flow is low. Cash allows to managers to invest on projects relieved from the anxiety of failure, maybe confronting them with the shareholder's best interest. According to Fereira and Vilela (2004), cash holdings reduce the likelihood of financial distress. In addition, they allow the pursuance of investment projects regardless the unexpected financial constraints and minimize the costs of raising external funds from borrowing ready cash or forcing to liquidate assets. However, the decision of holding excessive amounts of cash may have negative consequences under ineffective use. The accumulation of cash holdings may hide lost performance or investment opportunities (Ferreira & Vilela, 2004). Prior to the financial meltdown, the manufacturing sector had not fared better largely due to high production cost. Owing to these, the domestic economy witnessed an unprecedented closure of factories and production plants last year. Indeed, it was a confirmation that the nation's domestic economy was sinking (Proshare, 2020).

Similarly, the Chairman of FMN, John Coumantaros, said the Nigerian manufacturing sector is currently faced with monumental challenges and constraints that combined to lower productivity, output and increased cost of doing business. According to him, this has continued to depress profit margins of many manufacturing companies and impede their growth. "Some of the major constraints experienced by the manufactures include soaring input costs, unrest in North East and general fears and uncertainties. These adverse conditions contributed to lower industrial capacity (Guardian, 2020).

In addition, beyond this, there is a load of unsold inventory given the shutdown of most global economies. Given this scenario, liquidity of most Indigenous oil concerns has already been severe as a result of the loss of cash flow due to the global energy crisis caused by the pandemic. This disruption has dire consequences for the local players in Nigeria's oil and gas industry, who are fighting to maintain operations and margins (Thisday, 2020). Even flour Mills of Nigeria Plc, the country's biggest miller by market value, planned to issue as much as N40 billion in bonds and was also considering a rights issue to enable it to deal with funding challenges arising from a scarcity of naira, its Managing Director, Paul Gbededo, said (Thisday, 2017).

Subsequently, empirical review on the relationship between cash holdings and firm characteristics have focused on developed and developing economies is inconclusive. For example, in Belgium, Orens and Reheul (2013) examine the idiosyncratic manager specific influence on SMEs cash holdings; Amess, Banerji, and Lampousis (2015) consider the causes and consequence of corporate cash holdings in the United States; the Taiwan context (Kuan et , 2011) examines the relationship between corporate governance and cash policy within family-controlled firms; the Vietnam context (Thi & Nhan, 2016) presents a review of cash holdings and corporate governance mechanisms (Barasa, Achoki, & Njuguna, 2018; Al-Najjar & Clark, 2017) explore the relationship amid cash holdings and internal, external governance mechanisms in Middle East and North African countries. In Nigeria, (Lawrencia Olatunde Ogundipe, Sunday Emmanuel & Ogundipe, 2012) focused on firm characteristics (using net working capital, firm size, leverage, return on asset, cash flow and investment opportunity) and cash holding evidence from emerging market. Similarly, Ozordi, (2020) conducted studies on corporate dynamism (using board skills, board ownership, director's compensation and female leadership) and corporate cash holding, evidence from listed Nigeria manufacturing firms. In light of the above, therefore, this study sought to enhance the psychometric power of the variables (CAPEX) by taking into congnisance the measurement of firm specific characteristic. However, there has been a dearth of literature in Nigerian economy regarding firm specific characteristic and cash holding in manufacturing sector. More so, to the best of author's knowledge and from the reviewed of prior literatures, no work has been conducted on firm specific characteristic (using CAPEX) and cash holding in manufacturing firms, Nigeria. Most of the previous literatures did not pay much attention on CAPEX as factors that could influence cash holding decision of the organization.

Against this conjuncture, this study aims to explore the influence a firm specific characteristic has on manufacturing firm's decision to hold cash.

2.0 Literature Review

Recent work suggests three theoretical models that can help define which corporate cash-keeping decisions are made by the characteristics of the business: trade-off theory, pecking order, and free cash theory. Therefore, we highlight the results of previous empirical studies.

2.1 Pecking order theory

The pecking order theory of Myers (1984) and Myers and Majluf (1984) asserts that to minimize asymmetric Information costs and other borrowing risks would be financed first by companies with retained earnings, followed by stable debt and volatile debt, and lastly by equities. Extending this principle to clarify the determinants of cash leads to the assumption that there is no optimal amount of cash, but that cash is seen as a bridge between remaining earnings and spending requirements. In this theory, the amount of cash will simply be the product of the options to finance and spend. Consequently, when existing operating cash flows are adequate to finance capital acquisitions, companies repay loans, pay dividends, and eventually raise cash. When retained earnings are inadequate to fund existing assets, companies use accumulated cash reserves and, if necessary, issue new debt and eventually issue shares as they reach their debt service capacity. Based on the pecking order theory, firms with larger investment expenses have less or no surplus from internally generated funds to invest in liquid asset reserves, and hence they hold less liquid assets (Opler et al., 1999). In the same vein, Bates, Kahle, & Stulz (2009) argue that if capital expenditures create assets that can be used as collateral, capital expenditures could increase debt capacity and reduce the demand for cash.

2.2 Firm Specific Characteristics and Cash holding

Cash holdings are an essential part of the growth and survival of the business and receive a significant amount of interest from investors and financial analysts. Liquidity is measured as the ratio of cash and cash equivalents to net assets (Ferreira & Vilela, 2004; Opler, Pinkowitz L., Stulz & Williamson 1999). This relationship deviates from numerous factors such as the industry and the characteristics of the company. Nevertheless, some studies such as that of Guney et al. (2007) found a negative relationship in low levels of debt between cash and leverage, since debt increased the relationship. Nguyen (2006) investigated the hypothesis that cash balances have a precautionary motive and serve to mitigate the volatility of operating earnings. Using a sample of 9,168 firm-year observations from Tokyo Stock Exchange for the period of 1992 to 2003, through regression analysis, he found that cash holding increases with its profitability growth. Megginson & Wei (2010) studied the determinants of cash holdings and the value of cash in China's share-issue privatized firms from 1993 to 2007. Through regression analysis, they also found that more profitable firms hold more cash.

In addition, Barasa, Achoki, and Njuguna, (2018) Determinants of Corporate Cash Holding of Non-Financial Firms Listed on the Nairobi Securities Exchange. The results of OLS with year and industry dummies and panel data models show that there exists significant positive and negative. More so, Islam(2012), Manufacturing Firms ' Cash Holding Determinants : Evidence from Bangladesh. The data set contains five years' (2006-2010) data of firm specific variables. Regression analysis considered sufficient for hypothetically assumed least squared model. The analysis showed all considered variables other than net working capital, Tobin's Q and Volatility of Cash flow hold significant relationship with Cash hold by the firms, which contain cash and cash equivalent. Lawrencia, Sunday, and Ajao (2012), investigated the relationship between cash holding and firm characteristics. A sample of 54 Nigerian firms listed on Nigerian Stock Exchange for a period of 15 years (from 1995-2010) was selected. This study applied co-relational research design. The results show that cash flow, net working capital, leverage, profitability and investment in capital expenditure significantly affect the corporate cash holdings in Nigeria. From a study of Swiss firms Drobetz and Grüninger (2007) report an inverse relationship between firm size and cash holdings relationship between cash holding and cash flow and leverage respectively and insignificant relationship between cash holding and market-to-book value and firm size.

Hence, based on the previous discussions, our hypotheses are stated as follows:

H1: Profitability has no significant effect on cash holding of listed manufacturing firms in Nigeria

H2: Leverages has no significant effect on cash holding of listed manufacturing firms in Nigeria

H3: Net working capital has no significant effect on cash holding of listed manufacturing firms in Nigeria

H4: CAPEX has no significant effect on cash holding of listed manufacturing firms in Nigeria

3. Methodology

The purpose of this study is to investigate the effect of firm-specific characteristics on corporate cash holding. Thus, this study adopted the correlational research design. This design is informed by the research paradigm which is the positivism approach. There were 51 manufacturing companies quoted on the Nigerian Stock Exchange as at the date of data collection. The adjusted population is thirty-five (35) firms based on the availability of data. The annual report is the legitimate blueprint of any external and internal investor in

making decisions. Hence, this report was explored to extract information on the explanatory construct (profitability, leverage, networking and CAPEX) and the explained construct (corporate cash holding), respectively. Spanning from 2012 to 2019 being eight (8) years was duly scrutinized under this study. A technique of analysis called multiple regressions on the panel data is utilized. This is due to the suitable of this method for this study since the issue of linearity is fulfilled.

Table 3.1 Variable Measurement

Variables	**Type**	**Measurement**	**Source**
Corporate Cash Holding	DV	It is quotients of cash and cash equivalents to book value of assets less Cash and equivalents.	(Lawrencia *et al.*, 2012)
Profitability	IV	net income/total assets	(Chukwuebuka & Grace, 2019)
Leverage	IV	The sum of long-term debt and debt in current liabilities divided by the book value of total assets	(Barasa et al., 2018)
Net Working Capital	IV	Net working capital-to-assets ratio of net current assets less cash and cash equivalents to total assets less cash and equivalents.	(Lawrencia *et al.*, 2012)
CAPEX	IV	capital expenditures/total assets	(Magerakis et al., 2015)

Source: Author's computation

Model Specification

The model is stated below:

Thus, the regression could be presented in general as follows;

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_k X_{kit} + e_i t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{equation. } 1$$

Where;

Y_i is the dependent variable; $\beta_0$is constant of the model when all independent variables are said to be zeros. X_1i, X_2i and X_{ki} are the independent variables of the model and "i" is individual company for the estimation and finally e_i is residuals of the model.

Therefore, the model of the study is expressed below;

$CCH = \beta\ 0 + \beta_1 Profi + \beta_2 LEV + \beta_3 NTWC + \beta_4\ CAPEX + E_{it}$…….equation 2

Where;
CCH= Corporate cash holding
Prof = Profitability
LEV = Leverage
NTWC = Networking Capital
CAPEX = Capital Expenditure
ß0= Intercept;
ß1 to ß4 = Coefficient of the independent variables;
ß5 = Coefficient of the control variable;
Є = Error term;
it= Subscript for Panel Data

4. Data Presentation and Discussion

In this section, data collected in the course of carrying out the study were presented and discussed. This section presents the descriptive statistics, correlation matrix and the inferential statistics. The hypothesis formulates for the study was tested to institute the effect of firm-specific characteristics on corporate cash holding.

Table 4.1 Descriptive Statistics

Variables	Obs	Mean	Std. dev.	Min	Max
CCH	280	0.0532	0.2186	0.0034	0.0809
PROF	280	0.140	0.034	-0.102	0.218
LEV	280	0.3571	0.4264	0.1653	0.8241
NTWC	280	0.0264	0.0174	0.0322	0.4126
CAPEX	280	0.0313	0.0342	0.0000	0.6324

Source: summary of Stata Output

Table 4.1 presented the analysis of both explanatory and explained variables using a descriptive statistics method of data analysis. It indicated that average of corporate cash holding (CCH) of the sampled manufacturing firms is 0.0532 approximately having maximum and a corresponding minimum of 0.0034 and 0.0809 respectively. The result shows the average indicators of variables computed from the financial statements. The return rate measured by return on asset (ROA) reveals an average of 1.4percent. This picture suggests a poor performance during the period under study. The ROA measures the contribution of net income per naira (local currency) invested by the firms' stockholders; a measure of the efficiency of the owners' invested capital.

The minimum and maximum values of ROA were -0.102 and 0.218 respectively. That means the most profitable manufacturing firms earned N0.22 of net income from a single N1 of asset investment and the maximum losses incurred by the manufacturing firms is -N0.102 on each N1 of asset investment. The standard deviation of ROA of 0.034 shows low variability across insurance firms. This result shows that the average is far lower than the maximum value and minimum value implying a wide range of variation domiciled in value of firm size among quoted manufacturing firms in Nigeria. In addition, the average value of leverage (LEV) of the sampled manufacturing firms is 0.3751, with the standard deviation of 0.4264 indicating high variation across the sampled firms. The minimum and maximum values are 0.1653 and 0.8241 respectively. Networking capital as measured using ratio of net current assets less cash and cash equivalents to total assets less cash and has mean value of 2.6% with corresponding standard deviation of 1.74% Based on value of standard deviation, it can be deduced that the networking capital is moderately clustered around the mean of data under study, invariably the manufacturing firm's networking capital is different from firm to firm. Moreover, the minimum value is 3.22% and 41.26% as maximum value thus; it has a large range of networking capital.

The minimum and maximum values are 0.0000 and 0.4312 respectively. Finally, the average of CAPEX among sampled listed manufacturing firms is 0.0313 as the standard deviation of 0.0342 indicates high variation of across the sampled firms. The minimum and maximum values are 0.0000 and 0.6324 respectively.

Table 4.2 Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	VIF	1/VIF
(1) CCH	1.000							
(2)PROF	0.181	1.000					1.325	.755
(4) LEV	-0.348	0.103	0.190	1.000			1.262	.792
(5) NTWC	0.460	0.532	0.421	0.215	1.000		1.212	.825
(6) CAPEX	-0.268	0.342	0.221	0.101	0.223	1.000	1.202	.832
Mean							1.26	

Source: summary of Stata Output

From the correlation matrix presented in table 4.2, it is observed that PROF and NTWC have positive correlation with CCH of selected quoted manufacturing firms in Nigeria. However, probable implication arising from this result is that the variables have moderate sensitivity to CCH. In contrast, LEV and CAPEX were found to have negative relationship with CCH. On the other hand, the relationship among the independent variables is not too strong to warrant problem of multicollinearity as the coefficient are less than 0.80(Gujarati, 2004). To further consider the collinearity issues, this study conducted Variance Inflation Factor (VIF) test to quantify its severity in our model, where the variance factors of each variable is calculated. The results of the VIF test ranges from a minimum of 1.202 to a maximum of 1.325 which are all less than 10 hence the absence of collinearity among the explanatory variables(Hair et al., 2014).To further substantiate this claim, the mean VIF is 1.26, also confirming the absence of multicollinearity among all the explanatory and control variables of the study.

Diagnostic Test

Before the conduct of the final regression, this study conducted diagnostic analysis to maintain the un-biasness of the parameters as argued by wooldridge (2011). Among the test conducted in addition to the multicollinearity test are based on the recommendation of wooldridge (2011) is Hausman test to make a choice between random and fixed effect models. With the P-value of 0.0000 which is statistically significant, fixed effect model is therefore considered appropriate for this study. Further test such as normality, heteroskedasticity and auto correlation test were also conducted. This study conducted a normility test on the residuals of the model using shapiro-wilk and the study found that, the residual was normally distributed as the p-value is statistically insignificant. While the Wooldridge test for autocorrelation in panel data was also significant indicating presence of auto correlation. Also the heteroskedasticity test conducted

using Modified Group Wise proved statistically significant with the p-value of 0.000, which indicates absence of homoscedacity. The presence of heteroscedasticity violates the homoscedasticity assumption and may lead to a wrong inference. Due to the presence of heteroskedasticity and auto correlationin the fixed effect model, the study therefore conducted panel corrected standard error (PCSE) model which overcome the both heteroskedasticity and auto correlation issues. PCSE preserves the weighting of observation for autocorrelation, but uses a sandwich estimator to incorporate cross-sectional dependence when calculating standard errors (Mantobaye Moundigbaye, William S. Rea, 2017). Thus, this study run the PCSE model based on the recommendation of Gujarati (2004) and finally, the PSCE model is hereby presented and discussed next.

Panel Corrected Standard Error (PCSE) Result

The study presents the regression result panel corrected standard error (PCSE) regression in Table 3 below.

Table 4.3: Panel Corrected Standard Errorregression

CCH	Coef.	St.Err.	Z-value	p-value
PROF	0.097	0.031	3.10	0.002
LEV	-0.588	0.137	-7.19	0.000
NTWC	4.235	0.988	4.29	0.000
CAPEX	-0.207	0.149	-1.39	0.164
Constant	0.295	0.074	3.96	0.000

R-squared	0.4735	Hettest p-value	0.000
Number of obs	280.000	Hausman p-value	0.000
Chi-square	48.26	Normality Test	0.633
Prob> chi2	0.000		

**** p<0.01, ** p<0.05, * p<0.1*

Source: Summary of Stata Output

The result in table 3 shows the result obtained from the Panel Corrected Standard Error Regression (PSCEs) which was interpreted after conducting all relevant tests. The coefficient of determination- R-squared was 0.4735 which showed that about 47.35%% of variation in CCH as was caused by variations in explanatory

variables as indicated by the model. This implies that profitability (PROF), leverage (LEV), networking capital (NTWC) and CAPEX jointly explained 47.35% of corporate cash holding of quoted manufacturing firms in Nigeria and it is statistically significant at 1% as indicated with p-value of 0.000 and chi-square of 65.23 respectively. While the remaining 52.65% are caused by other variables not found in the equation but measured by the error term.

From the Table 3 the relationship between profitability (PROF) and corporate cash holding of listed manufacturing firms is negative as indicated with the coefficient of 0.097, and it is statistically insignificant as proven with the P-value of 0.002. This implies that it has contributed significantly to cash holding at the rate of 1% level of significant. On this note, we reject null hypothesis which states that profitability has no significant effect on corporate cash holding of listed manufacturing firms in Nigeria. This finding conforms with that of Lawrencia, Sunday, and Ajao (2012), who found significant relationship between profitability and cash holding.

On the contrary, there exists negative and significant relationship between leverage (LEV) and corporate cash holding (CCH) as indicated statistically by the coefficient of -0.588 with the p-value of 0.000, which is at 1% level of significance. It means increase in leverage will result to decrease in corporate cash holding. This is because high leverage gets a high return on investment and high-interest costs, this lead to reduce their ability to hold cash. In addition, when companies have a good credit policy tend to expand their business, they will use retained earnings to reinvest this lead to reduce their cash and cash equivalent. This finding supports the proposition of free trade-off theory and the findings of Guney et al. (2007) Barasa, *et al.,* (2018) Gill *et al.,* (2011) Magerakis *et al.,* (2015). On this basis, we therefore support the alternate hypothesis, which states that growth opportunity has a significant positive effect on corporate cash holding of listed manufacturing firms in Nigeria.

From the regression result, the coefficient value of networking capital (NTWC) is 4.235 with the p-value of 0.000. The implication is that there is a positive and significant relationship between networking capital and corporate cash holding of listed manufacturing firms in Nigeria. This implies that increase in networking capital will result to increase in corporate cash holding. This is because when networking capital changes, cash can effectively get rid of financial crisis, smooth and enough networking capital keeps enterprises run well. This finding supports the findings of Islam(2012) and Lawrencia, Sunday, and Ajao (2012), who found

significant relationship between networking capital and cash holding. On this basis, we therefore support the alternate hypothesis, which states that networking capital has a significant effect on corporate cash holding of listed manufacturing firms in Nigeria.

Finally, the result revealed insignificant and negative relationship between CAPEX and corporate cash holding. This is statistically proven by the coefficient of 0.207 with the p-value of 0.164; this result is against our apriori knowledge and the reviewed literatures. However, we fail to reject null hypothesis which state that, CAPEX has no significant effect on corporate cash holding of listed manufacturing firms in Nigeria.

5.0 Conclusion and Recommendation

Corporate cash assets represent a major accounting problem so the funding and massive discussions among academics were a concern. The aim of this study is to present new empirical evidence on the effect of company properties on corporate cash holdings in the sense of Nigeria.

Data was used from a sample of 35 manufacturing firms listed on the Nigeria Stock Exchange from 2012 to 2019. The data were interpreted using multiple regression models. The results obtained in this study are consistent with the scientific data about the literature on corporate cash possession. Our study concludes, profitability, leverage and networking capital are good determinants of corporate cash holding. In line with the findings, the study therefore recommends that, managers must rationally assume that a company with excessive short asset replacements, high debt, and a capital rate should maintain a decrease in cash. If for the rare object, a company with high delegates of quick assets, excessive debt, and cost of equity has excessive currency holdings, this pressure is a flag of a capacity organizing war. Nigerian manufacturing firms should develop a good strategy for earning high returns from their assets since this has positive significant effect on cash holdings. managers should avoid holding excessive cash reserves as this might attract scrutiny from the capital markets. There should be an optimal trade-off approach to cash holdings, and also there should be a hierarchy explanation for holding excess cash.

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