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INFLUENCE OF CASH MANAGEMENT ON FINANCIAL PERFORMANCE OF SELECTED MANUFACTURING COMPANIES IN NIGERIA

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Abstract: *This study investigated the influence of cash management on financial performance of selected manufacturing companies in Nigeria. The population of the study included fifty five (55) manufacturing firms quoted on the Nigerian Stock Exchange (NSE) with a sample size of twenty-six (26) manufacturing companies purposively selected from the consumer and industrial goods sub-sectors. Ex-post facto research design was employed in the study. The secondary data was obtained from Annual reports of sampled companies as provided by individual companies and Nigerian Stock Exchange (NSE) website. The panel least square regression analysis was employed in validating the hypotheses. The study revealed a significant negative effect of cash management on returns on assets and Tobin's Q. Returns on equity was negative and non-significant. Consequent on the findings, the study therefore recommends amongst others that management should set proper exit strategies for a high conservative cash management policy measure after considering banks' lending attitudes and capital market conditions.*

Keywords*: Cash management, Return on Assets, Return on Equity, Torbin Q.*

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1.1 Introduction

Cash management is the art and increasingly the science of managing a company's short-term resources to sustain its ongoing activities, mobilize funds and optimize liquidity (Sharma & Kumar, 2011). The most important elements of cash management are – efficient utilization of current assets and current liabilities of a firm throughout each phase of business operating cycle; the systematic planning, monitoring and management of the company's collections, disbursements and account balances; and the gathering and management of information to use available funds effectively and identify risk (Sharma & Kumar, 2011).

The size of a business entity, its geographical location and the nature of its operations are some of the factors that influence the techniques of cash management to be adopted. Such technique and its degree of sophistication in business processes vary from entity to entity. This can be exhibited by the fact that small and medium level enterprises with diverse branches located in different regions within a given country or in different countries normally try to adopt the cash pooling technique in managing its cash since it takes into consideration cross currency variations thus eliminating currency risk exposure (Ondiek, Deya, & Busaka, 2013). Basically, the process of managing cash today has been significantly influenced by the growing developments in the business world over the years.

(Kesseven, 2006). Lienert (2013) found out that modern cash management has four major objectives, namely; to ensure that adequate cash is available to pay for expenditures when they are due, to borrow only when needed and to minimize government borrowing costs, to maximize returns on idle cash and to manage risks, by investing temporary surpluses productively, against adequate collateral.

Firm performance issue has remained a central problem in strategic management research. It is often argued that the continued relevance of any firm in a particular industry is ultimately dependent on its performance (Obure, 2016). Firms with high cash holdings can take advantage of more investment opportunities, ensure adequate capital for planned or unplanned opportunities (business expansion, market opportunities during the financial crisis, when unexpected news brings a stock price down, real estate deal, business opportunities, and so on) (Ogundipe, Ogundipe, & Ajao, 2012), availability of cash holdings allows firms to take advantage of the moment. Firms can make profitable investment deals that have a huge impact on their continuity and also indicating the management's efficiency in using its assets to generate profit (Ogundipe, Ogundipe, & Ajao, 2012)

Statement of the problem

Research has proved that budget; a management tool in corporate organizations is used to reshape the economy of a firm for performance sustainability. Obi (2015) explained that corporate planning and budgeting are interwoven for effective coordination of strategies, policies and monitoring of results. He further explained that many firms are not making sustainable profit or do not generate sufficient funds because of management's failure to plan adequately. Cash management an integral part of budgeting remains necessary because there are always mismatches between the timing of payments and the availability of cash. Studies have noted that cash shortage is a chronic challenge to most firms, thereby making cash management very crucial to the survival and growth of micro and small-scale enterprises (Attom, 2014). Moreso further studies have shown that Nigerian companies hold excessive cash for reasons that include unstable political climate, planned offshore investments, anticipated future investments, acquisitions and labor unrests (Ogundipe, Ogundipe, & Ajao, 2012; Amahalu & Ezechukwu, 2017).

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It can therefore be deduced from the above that neither shortage of cash or excessive cash improves the performance of manufacturing firms. A point of equilibrium must therefore be achieved. The effect of such point is what this study intends to explore.

1.3 Objectives of the study

The main objective of this study is to ascertain the effect of cash management on financial performance of manufacturing firms quoted in Nigeria stock exchange while the specific objectives are to:

1. ascertain the effect of cash and cash equivalent on returns on assets (ROA)
2. examine the effect of cash and cash equivalent on returns on equity (ROE)
3. determine the effect of cash and cash equivalent on Tobin's Q.

1.4 Research questions

The following research questions were posed in line with the objectives enumerated above to guide the study:

1. What is the effect of cash and cash equivalent on returns on assets (ROA)?
2. What is the effect of cash and cash equivalent on returns on equity (ROE)?
3. What is the effect of cash and cash equivalent on Tobin's Q?

1.5 Research Hypotheses

The following hypotheses stated in null form were formulated to guide the study.

1. There is no significant effect of cash and cash equivalent on returns on assets (ROA)
2. There is no significant effect of cash and cash equivalent on returns on equity (ROE)
3. Cash and cash equivalent has no significant effect on Tobin's Q

1.6 Scope of the study

The study focused on the effect of cash flow management on financial performance of industrial and consumer goods sub-sector of manufacturing companies quoted on the floor of the Nigerian Stock Exchange [NSE] for a period of ten (10) years, (2010 to 2020). It utilized cash balance as proxy for cash management of the studied manufacturing companies.

.0. REVIEW OF RELATED LITERATURE

Related literatures were reviewed under three headings: conceptual review, theoretical review and empirical review.

2.1. Conceptual Framework

2.1.1 Cash management

Cash flow is simply the movement of cash and cash-equivalents within the business. Positive cash flow from operations indicates that a company's liquid assets are improving. This enables the entity to settle its debt, achieve profit maximization to shareholders, pay expenses and provide a buffer against future financial challenges. Negative cash flow indicates that a company's liquid assets are decreasing (Ogbonnaya, Ekwe, & Uzoma, 2016). Cash management is therefore the process of ensuring that businesses have good cash balances to ensure that they continue to stay in business. Thus, prudent cash management ensures that businesses would be able to honour its debt obligations as and when they fall due and also to facilitate the responsibility of the firm to pay for its upcoming expenses (Attom, 2014). Cash management forms an integral part of working capital management. Hence, it is considered as part of the scope of a good working capital management in modern businesses (Brealey, Myers & Allen, 2008).

2.1.2 Cash and Cash Equivalents

Cash equivalents are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes. For an investment to qualify as a cash equivalent, it must be readily convertible to a known amount of cash and be subject to an insignificant risk of changes in value. Therefore, an investment normally qualifies as a cash

equivalent only when it has a short maturity of, say, three months or less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they are, in substance, cash equivalents; for example, preference shares of a company acquired shortly before their specified redemption date (provided there is only an insignificant risk of failure of the company to repay the amount at maturity). Cash flows exclude movements between items that constitute cash or cash equivalents because these components are part of the cash management of an enterprise rather than part of its operating, investing and financing activities. Cash management includes the investment of excess cash in cash equivalents.

2.1.3 Financial Performance

Financial performance which is synonymous with profitability is the ability of a business to earn a profit, i.e., the ability to make profit from business activities.

Profitability measures management efficiency in the use of organisational resources in adding value to the business (Nishanthini & Nimalathasan, 2013). Profitability of firms is determined by both internal and external factors. Internal determinants of profitability are firm specific while the external factors are industry related. Internal factors of size, liquidity, leverage and financial assets of the firm have been found to have a major impact on profitability (Nishanthini & Nimalathasan, 2013).

2.1.2.1 Return on Asset (ROA)

Return on asset measure the effectiveness of the economic entity in using its assets to generate profit especially in manufacturing firms, the higher this ratio, the better for the economic entity as it indicates the management efficiency in using its assets to generate profit (Ogundipe, Ogundipe, & Ajao, 2012). Mathematically Return on Asset ratio is = Net profit/Total Assets

Cash management allows firms to take advantage of the moment. Firms can make profitable investment deals that have a huge impact on their continuity whether for restructuring purposes or for taking advantage of new opportunities. On the other hand, the cash management must be sound, thorough and logical in order to avoid the negative impact of holding too much cash (Elkinawy & Stater, 2007). The performance of any firm not only plays the role to increase the market value of that specific firm but also leads towards the growth of the whole industry which ultimately leads towards the overall prosperity of the economy (Ahmed et al 2011). Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Frésard (2010) found evidence that firms holding higher cash than their competitors achieve better performance and profitability when measured by return on assets. He presented evidence that firm's market-share increased than that of their competitors as a result of effective corporate cash management.

2.1.2.2 Return of Equity (ROE)

Ward and Price (2006) stated that return on equity reveals how much profit a company earned in comparison to the total amount of shareholder equity shown on the statement of financial position. A business that has a high return on equity is more likely to generate more cash internally than a business with a low return on equity. Return on Equity is calculated as: Net income/Average Equity.

Return on equity tells what percentage of profit that company makes for every monetary unit of equity invested in the company. It does not specify how much cash will be returned to the shareholders, since that depends on company's decision about dividend payments and on how much the stock price appreciates. However, it's a good indication of generating a return that is worth whatever risk the investment may entail (Berman, Knight & Case 2013).

2.1.2.3 Tobin's Q

Tobin's q is the ratio between a physical asset's market value and its replacement value. It was introduced in 1968

by James Tobin and William Brainard, although the use of the letter "q" did not appear until Tobin's 1969 article "A general equilibrium approach to monetary theory"(Tobin (1977). The numerator is the market valuation: the going price in the market for exchanging existing assets. While the denominator, is the replacement or reproduction cost: the price in the market for the newly produced commodities. This ratio has considerable macroeconomic significance and usefulness, as the nexus between financial markets and markets for goods and services. Mathematically it is stated thus:

$$\frac{\text{Equity market value + Liabilities market value}}{\text{Equity book value + Liabilities book value}}$$

In a perfect Modigliani-Miller world, companies can easily go to capital markets to finance their profitable investment projects at negligible transaction costs. However, many international studies show that such companies maintain important and effective cash management. For example, Kalcheva and Lins (2003), find that companies hold on average 16% of their total assets in cash or cash equivalents, Ferreira and Vilela (2004) find an average cash ratio of 15%, and Guney, Ozkan A. and Ozkan (2003) observe an average cash ratio of 14%. According to Golan et al., (2003) firm's resources and objectives summarized as firm characteristics, influence performance of organizations. These include structure, market and capital-related variables. Structure-related variables include firm size, ownership and firm age. Market related variables include industry type, environmental uncertainty and market environment. Capital-related variables entail liquidity and capital intensity.

Tobin's Q is a widely used proxy for operating performance in studies of corporate governance. For example, Gompers, Ishii and Metrick (2003) conclude that firms with more shareholder rights are better governed since they have a higher Tobin's Q.

2.2 Theoretical Framework

Cash flow theory

Huseyin (2011) asserts, 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, (Jensen, 1986). Having cash available to invest, the manager does not need to raise external funds and to provide capital markets detailed information about the firm's investment projects (Huseyin, 2011). Hence, managers could undertake investments that have a negative impact on shareholders wealth. Managers of firms with poor investment opportunities are expected to hold more cash to ensure the availability of funds to invest in growth projects, even if the NPV of these projects is negative (Huseyin, 2011). This would lead to destruction of shareholder value and, even if the firm has a large investment programme and a low market-to-book ratio. Thus, using the market-to-book ratio as a proxy, it is likely that the relation between investment opportunity set and cash holdings will be negative. This is critical in management of liquidity in the firm and ensuring there is a balance between meeting the current obligation to mitigate liquidity short fall and investing in the interest of shareholders wealth maximization (Huseyin, 2011).

Assumptions of the theory:

1. 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
2. Managers could undertake investments that have a negative impact on shareholders wealth.
3. It is likely that the relation between investment opportunity set and cash holdings will be negative

2.3 Empirical Review.

Soet, Muturi, & Oluoch, (2018) examined the effect of operating cash flow management on financial performance of mutual funds in Kenya. The study employed causal

research. Secondary panel data from the audited financial statements of 22 mutual funds were retrieved from financial reports for the period 2011-2016. The p-value at 5% level of confidence for each t-test was used to make conclusions on whether to accept or reject the null hypotheses. The study found out that operating cash flow management had significant and positive effect on return on assets and insignificant and positive effect on return on equity.

Kinyanjui, Kiragu, & Kamau, (2017) investigated the effect of cash management practices (cash holding practices, use of technology and cash pooling practices) as well as analyzed the combined effect of the cash management practices on financial performance of SMEs in Nyeri town, Kenya. The study employed a descriptive research design with target population being the registered SMEs in Nyeri town. Data was collected using a self-administered semi-structured questionnaire from a sample population of 62 SMEs operating in Nyeri town and registered by the business registrar's office in Nyeri County. Data was analyzed using statistical package for social sciences (SPSS) to generate descriptive and inferential statistics. The findings of the study revealed that cash holding practices and use of technology in cash management had a relevant effect on financial performance of SMEs in Nyeri.

Afrifa, & Tingbani, (2017) conducted a study on the relationship between working capital management (WCM) and SMEs' performance by taking into consideration the plausible effect of cash flow. The study adopted a panel data regression analysis on a sample of 802 British quoted small and medium enterprises listed on the alternative investment Market for the period from 2004 to 2013. The results of the study demonstrated the importance of cash flow on SMEs' WCM and performance. According to the findings, WCM has a significant negative impact on SME performance. Additionally, the evidence reveals that cash flow constrained (non-constrained) SMEs are able to enhance their performance through decreased (increased) investment in working capital.

Ogbonnaya, Ekwe, and Uzoma, (2016) examined the relationship between cash flow and performance in the Banking sector of Nigeria. The study involved a survey of four (4) Banks quoted in the Nigeria Stock Exchange. Data were obtained from the annual report and accounts of selected Banks. The data were subjected to statistical analysis using correlation technique. The result of the study revealed that operating cash flow has a significant and strong positive relation with performance in the Banking sector in Nigeria, it was also identified that investing cash flow and financing cash flow have negative and weak relationship. The study recommends that regulatory authorities such as CBN, SEC, CAC and NDIC should be securitizing their financial statement and also external auditors of the quoted Banks in the Banking sector to use cash flow ratio in evaluating performance which will help investors make good decisions.

3.0 Research Materials and Methodology.

The study adopted 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.

3.2 Population of the Study

The population of the study comprises of quoted manufacturing firms on the Nigerian Stock Exchange (NSE) as at end of 2020 financial year. The number of firms included in the various sectors that constitute the population of the study is shown in appendix 1.

3.3 Sample Size.

The study was limited to twenty-six (26) companies selected using purposive sampling technique; the decision was premised on the classification of the firms as manufacturing (based on the nature and description of

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activities) as shown on the Nigerian Stock Exchange (NSE) website. The sample selection criteria are shown in Appendix 2.

3.6 Model Specification

Implicit:

ROA = *f* (CCE, Firm Size, Leverage) ……1

ROE = *f* (CCE, Firm Size, Leverage) ……..2

TQ = *f* (CCE, Firm Size, Leverage) ……..3

Explicit:

$ROA_{(i,t)} = \alpha + \beta_1 CCE_{(i,t)} + \beta_2 Firm\ Size_{(i,t)} + \beta_3 Leverage_{(i,t)} + \mu$……4

$ROE_{(i,t)} = \alpha + \beta_1 CCE_{(i,t)} + \beta_2 Firm\ Size_{(i,t)} + \beta_3 Leverage_{(i,t)} + \mu$……5

$TQ_{(i,t)} = \alpha + \beta_1 CCE_{(i,t)} + \beta_2 Firm\ Size_{(i,t)} + \beta_3 Leverage_{(i,t)} + \mu$……6

Where:

ROA = Return on Assets

ROE = Return on Equity

TQ = Tobin's Q

α = Constant

μ = error term

3.9 Decision rule

The decision rule is based on the sign and significance of the computed *t-statistic* from the regression output. If the p value of the *t statistic* < *.05* (the chosen alpha level) the null hypothesis is rejected; and, the variable is postulated to have a significant effect. The A prior expectation of the study is that the cash and cash equivalent (CCE) will reveal a negative significant effect on returns on assets, returns on equity and Tobin's q given the control variable.

4.0. Data presentation and Discussion.

Appendix 3 showed the six variables included in the model given in average form. The control variables include; Firm size and Leverage; Independent variable is cash and cash equivalent (Cash balance) while the dependent variables are return on assets (ROA), returns on equity (ROE) and Tobin's Q (TOBQ).

The descriptive statistics of the variables utilized in the study are presented in Appendix 4 showing the mean, median, standard deviation, observations, minimum and maximum values of each selected variable. The description helps to show the nature of the data in terms of dispersion and central tendencies.

4.1. Test of Hypotheses.

4.1.1 Hypothesis one

Restatement of hypothesis: There is no significant influence of cash and cash equivalent on returns on assets (ROA)

Table 1: PLS regression output for hypothesis one

Dependent Variable: ROA

Method: Least Squares

Sample (adjusted): 1 26

Included observations: 260 after adjustment

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-33.55965	7.621500	-4.403287	0.0000
CCE	0.088427	0.017186	-5.145174	0.0000
FIRM_SIZE	4.743714	1.029367	4.608381	0.0000
LEVERAGE	0.042180	0.042303	0.997088	0.3197

R-squared	0.170301	Mean dependent var	6.109834
Adjusted R-squared	0.160577	S.D. dependent var	17.21845
S.E. of regression	15.77554	Akaike info criterion	8.370064
Sum squared resid	63710.15	Schwarz criterion	8.424843
Log likelihood	-1084.108	Hannan-Quinn criter.	8.392086
F-statistic	17.51515	Durbin-Watson stat	1.178440
Prob(F-statistic)	0.000000		

Source: E-Views, 9.0

The regression model shown above with one IV and five CVs, as follows: log of total asset and debt to asset ratio (Leverage). The overall R-squared is 0.1703 and the Adjusted R-squared 0.1606. The *p*-value of the F-statistic is less than .05 (i.e., margin of error), which confirms the statistical significance of the model. The *coefficient* of the variable of interest: cash and cash equivalent (CCE) was (0.0000) and *z-statistic* (-5.145) negative and statistically significant (*p*-value<.05). Therefore, the null hypothesis is rejected and alternate, accepted. Hence, there is a significant influence of cash and cash equivalent on returns on assets (ROA)

4.4.2 Hypothesis two

Restatement of hypothesis: There is no significant influence of cash and cash equivalent on returns on equity (ROE)

Table 4.5: PLS regression output for hypothesis two

Dependent Variable: ROE
Method: Least Squares
Sample (adjusted): 1 260
Included observations: 260 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3867.915	2085.134	1.854996	0.0647
CCE	-3.508156	4.701928	-0.746110	0.4563
FIRM_SIZE	-473.7273	281.6201	-1.682150	0.0938
LEVERAGE	1.440842	11.57351	0.124495	0.9010

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R-squared	0.014812	Mean dependent var	280.2425
Adjusted R-squared	0.003267	S.D. dependent var	4323.031
S.E. of regression	4315.964	Akaike info criterion	19.59329
Sum squared resid	4.77E+09	Schwarz criterion	19.64807
Log likelihood	-2543.128	Hannan-Quinn criter.	19.61532
F-statistic	1.282970	Durbin-Watson stat	2.036072
Prob(F-statistic)	0.280680		

Source: E-Views, 9.0

The regression model shown above with one IV and five CVs, as follows: log of total asset and debt to asset ratio (Leverage). The overall R-squared is 0.015 and the Adjusted R-squared 0.003. The *p*-value of the F-statistic is greater than .05 (i.e., margin of error), which interprets that the model is statistically insignificant. The *coefficient* of the variable of interest: cash and cash equivalent (CCE) was (0.4563) and *z-statistic* (-0.74611) negative but statistically insignificant (*p*-value>.05). Therefore, the null hypothesis is accepted and alternate, rejected. Hence, there is no significant influence of cash and cash equivalent on returns on equity (ROE)

4.4.3 Hypothesis three

Restatement of hypothesis: Cash and cash equivalent has no significant influence on Tobin's Q

Table 4.6: PLS regression output for hypothesis three

Dependent Variable: TOBQ
Method: Least Squares
Sample (adjusted): 1 260
Included observations: 260 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.380960	0.872089	0.436837	0.6626
CCE	0.004068	0.001967	2.068549	0.0396
FIRM_SIZE	0.208241	0.117785	1.767974	0.0783
LEVERAGE	0.003934	0.004841	0.812724	0.4171

R-squared	0.031897	Mean dependent var	2.163971
Adjusted R-squared	0.020552	S.D. dependent var	1.823954
S.E. of regression	1.805114	Akaike info criterion	4.034389
Sum squared resid	834.1594	Schwarz criterion	4.089169
Log likelihood	-520.4706	Hannan-Quinn criter.	4.056411
F-statistic	2.811578	Durbin-Watson stat	0.439706
Prob(F-statistic)	0.039933		

Source: E-Views, 9.0

The regression model shown above with one IV and five CVs, as follows: log of total asset and debt to asset ratio (Leverage). The overall R-squared is 0.032 and the Adjusted R-squared 0.021. The *p*-value of the F-statistic is less than .05 (i.e., margin of error), which confirms the statistical significance of the model. The *coefficient* of the variable of interest: cash and cash equivalent (CCE) was (0.0396) and *z-statistic* (2.0685) positive and statistically significant (*p*-value<.05). Therefore, the null hypothesis is rejected and alternate, accepted. Hence, cash and cash equivalent have a significant influence on Tobin's Q.

The A prior expectation of the study is that the cash and cash equivalent (CCE) will reveal a negative significant effect on returns on assets, returns on equity and Tobin's q given the control variable.

4.5 Discussion of Findings.

In line with the three objectives of the study: to ascertain the effect of cash and cash equivalent on return on assets, return on equity and on Tobin's Q the discussion of findings were carried out.

The results of the analyses showed that there is a strong negative influence between cash and cash equivalent on returns on assets. This is in line with the apriori expectation as it is earlier expected that cash and cash equivalent (CCE) will have a negative significant effect on returns on assets. This finding is in line with Ayegbusi, and Akinlo, (2016) who examined the effect of cash holdings on the performance of firms in Nigeria over the period 2001-2012 and found cash flows, growth opportunities, size, and net working capital to exert negative impact on firm's performance. Also, Akinyomi (2014) in Pakistan and Nigeria respectively using multiple regression and Pearson correlation found out that cash holdings have negative association with performance.

The study also found a non-significant negative effect of cash and cash equivalent on returns on equity. This finding disagrees with the findings of Amahalu, and Ezechukwu, (2017) who found that cash holding (proxy by cash to total book value of assets and cash) has a positive and statistically significant effect on financial performance (proxy by Return on Asset, Return on Equity and Tobin's Q) at 5% significant level. Another contrary result was that of Abushammala and Sulaiman (2014) who examined whether cash holdings influenced firm performance using profitability aspect in Amman using simple regression technique and found a positive significant influence of cash holdings on profitability of the firms.

Finally, the current study found a positive and significant influence of cash and cash equivalent on Tobin's Q. This finding is in line with Mohammad, and Ali, (2017) who investigated the relationship between cash hold and overinvestment in the listed companies in Tehran Stock Exchange and found that there is a significant relationship between the cash holding and cash investment in the listed companies Tehran Stock Exchange. Also, in line with this finding are Malekian and Adili (2013) who examined the relationship between institutional ownership and cash balances in the listed companies in Tehran Stock Exchange and found a significant negative relationship between institutional investors and cash holdings, at confidence level of 95%. However, the results from Malekian and Adili (2013) also showed that there is not a significant relationship between the concentration of institutional investors and cash holdings.

5.0. Conclusion.

From the above findings, the research concludes that there is a strong negative influence between cash and cash equivalent on returns on assets while there is non-significant negative effect of cash and cash equivalent on returns on equity, so also a positive and significant influence of cash and cash equivalent on Tobin's Q.

5.3 Recommendations

The study therefore makes the following recommendations:

1. Management should set proper exit strategies for a high conservative cash management policy measure after considering banks' lending attitudes and capital market conditions.
2. It is highly recommended that firms set a time horizon to encourage firms to return to direct financing and restore the capital market function, which leads to firms' self-sustainable growth.
3. Optimization of cash holding reserves should also be encouraged. Efforts should be made by management to increase the value of the company through the funding policy, the provision of incentives to managers in the form of bonus shares, and improve company performance.

5.4 Contribution to Knowledge

The study has several academic contributions to the literature and more broadly to cash holding and management. Firstly, it developed casual links between cash and cash equivalent with various categories of cashflow information which can be beneficial to managers in understanding actual effects of cash management on corporate performance (returns on assets, returns on equity and Tobin's q).

It also provided additional evidence from a developing country perspective in Sub Saharan Africa such as Nigeria.

5.6 Suggestions for Further Studies

Future studies may consider a distinction between large and small firms in investigating the effect of cash management and performance in Nigeria. Although, a few of the findings seem to conflict with some earlier studies on the issue, the development may be attributed to the evolving market and the institutional structures of developing countries like Nigeria. The reasons for this contradiction should therefore constitute an area of future research. Moreover, analysis of the effect of cash management on firm performance can be extended to neighboring economies in sub-Saharan African region.

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Appendix 1: Number of firms by sub-sector

S/No	Sector	Number of firms
1	Agriculture	5
2	Conglomerates	5
4	Consumer Goods	16
6	Health Care	10
7	ICT	9
8	Industrial Goods	10
	Total	**55**

Source: The Nigerian Stock Exchange Website (2020)

Appendix 2: Sample selection

S/No	Sector	Number of firms
4	Consumer Goods	16
8	Industrial Goods	10
	Total	**26**

Source: The Nigerian Stock Exchange Website (2020)

Appendix 3. Data Presentation

Table 4.1: Average of selected variables utilised in the study

Panel_ID	Companies	ROE	ROA	TOBQ	CCE	FSize	Leverage
111	**Berger Paints Nig**	12.34115	7.88749	0.79406	76.25414	6.56158	35.69003
112	**Beta Glass Company**	14.55717	9.03729	0.77075	68.73548	7.45975	28.70210
113	**Cadbury Nig**	11.02525	5.36115	2.06125	118.20406	7.49377	10.30274
114	**Champion Breweries**	15.74459	-9.15143	2.16775	19.42252	6.91427	11.16609
117	**Chemical & Allied Product**	90.34561	38.23114	5.55964	229.22540	6.58458	12.39653

118	**Cutix**	24.73115	11.72928	1.32289	23.48028	6.20909	15.84571
119	**Dangote Cement**	33.14772	18.75368	3.31926	41.81572	8.99946	11.14542
120	**Dangote Sugar**	24.27707	13.06714	1.46643	80.52613	8.05463	7.97284
122	**Flour Mills Of Nigeria**	9.74132	2.94293	1.06808	46.95996	8.46455	9.68144
124	**Greif Nig**	-3.52951	-19.28798	1.39526	70.90959	5.76592	13.76018
125	**Guinness Nig**	19.80912	8.14194	2.59181	35.09542	8.08693	22.31429
126	**Honywell Flour Mill**	7.60827	3.39390	0.90822	56.85584	7.81446	1.99459
127	**International Breweries**	-50.93541	3.13859	2.80295	19.50587	7.57768	17.43464
130	**Lafarge Cement Wapco Nig**	9.69707	5.31739	1.39389	36.14310	8.46795	3.55222
132	**Mcnichols Consolidated**	10.62237	6.12953	1.28768	8.32021	5.59102	72.97480
133	**Meyer Plc**	-12.30796	-1.62773	0.81166	34.48589	6.39307	2.16279
135	**Nascon Allied**	34.28376	16.80986	1.96315	90.27628	7.22138	5.50893
137	**Nestle Nig**	68.35585	20.50738	6.84340	53.09498	8.06496	14.63907
138	**Nigeria Breweries**	29.21558	12.31624	3.83473	27.47379	8.46516	-7.67479
139	**Nigerian Enamelware**	9.69374	2.37119	1.54826	1.32658	6.47561	5.05343
140	**Nigerian Northen Flour Mill**	-93.61286	1.84420	1.20992	60.34375	6.59419	7.33981
142	**Portland Paint Nig**	1.87353	2.12450	1.28339	32.16282	6.31610	1.05448
143	**Premier Paints**	########	-18.16405	3.92948	4.45397	5.41443	20.62447
144	**Pz Cussons**	8.99531	5.35574	1.53321	51.35189	7.86332	24.24880

148	**Unilever Nig**	26.39448	7.73551	3.37450	99.22348	7.75656	40.59417
149	**Vitafoam Nig**	14.06403	4.89080	1.02162	23.00278	7.05972	4.86045

Source: Annual Reports and Account (2010-2019)
Key: ROA-Return on Asset; ROE-Return on Equity; TOBQ-Tobing's Q; FSIZ-Log of Total Asset; Leverage-Debt to asset ratio.

Appendix 4: Descriptive statistics of variables

	ROA	**ROE**	**TOBQ**	**CCE**	**FIRM_SIZE**	**LEVERAGE**
Mean	6.109834	280.2425	2.163971	54.17884	7.218082	15.12866
Median	5.986550	15.02855	1.397050	35.60622	7.233900	11.82860
Maximum	53.95940	69701.14	11.29860	293.0540	9.240900	92.11200
Minimum	-179.9173	-989.3803	0.309600	0.000000	5.092700	-250.6535
Std. Dev.	17.21845	4323.031	1.823954	57.31929	0.976846	23.70883
Skewness	-5.211498	16.01886	1.980211	1.955739	-0.086468	-4.586668
Kurtosis	56.20128	257.7396	7.307634	6.786960	2.105167	63.58514
Jarque-Bera	31839.33	714119.0	370.9405	321.1078	8.998531	40676.02
Probability	0.000000	0.000000	0.000000	0.000000	0.011117	0.000000
Sum	1588.557	72863.05	562.6324	14086.50	1876.701	3933.452
Sum Sq. Dev.	76787.01	4.84E+09	861.6435	850944.7	247.1452	145586.1
Observations	260	260	260	260	260	260

Source: E-Views