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The Rationale for Entity Cash Management: An Empirical Study

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ABSTRACT

The study was conducted to examine the rationale for entity cash management in Nigeria. We examined 50 companies quoted in the Nigerian Stock Exchange over 22 years from 1995 through 2016. The analysis was done by the use of Ordinary Least Square Method and Eview version 7. We found that cash holding is dependent on corporate size, leverage, net working capital and return on total assets. From the correlation matrix, cash holding level is positively related to cash flow variability, company size, growth opportunity, investment in fixed assets, leverage, return on assets and net working capital Cash holding depends on leverage and net working capital. Companies maintain much cash to be able to reduce the debt ratio or meet urgent demand for repayment of debts. Corporation should strive to maintain an appropriate level of cash holding as dictated by company size, leverage, net working capital and return on total assets.

Keywords: *Corporate Cash Holding, Entity Cash Management, Cash Conversion Cycle*

INTRODUCTION

Controlling cash has provided many challenges for all kind of businesses due to the fact that the free cash should be invested to earn more profit and retained to ensure the appropriate liquidity to meet demand in the future. Furthermore, there is also the conflict between a manager and shareholders in decisions on the level of cash holding because of agency problems (Shleifer and Vishny 1997; Megginson and Netter 2001). Thus, the primary task of the administrator is to find the right trade-off between profitability and cost (Martinez-Sola et al. 2013) as cited by Nhan in his work titled "A Review of Cash Holding and Corporate Governance Mechanisms in Transition Economies", 2016.

Keynes (1936) stated three motives for holding cash: transactional, precautionary, or speculative. Transactional motives originate from the point that companies cover their own transaction costs from their own funds. Speculative motives relate to the ability to finance profitable investment activities from cash reserves in order to avoid the cost of external funding. The precaution motive relates to liquidity, that is, corporations hold cash to be able to meet future cash needs.

Račić & Stanišić (2017) in their study discovered that companies with higher cash flow hold more cash in their assets. Larger companies as well as companies with more liquid assets and higher turnover coefficients tend to reduce their cash levels. According to their results, companies operating in the Republic of Serbia tend to hold the optimal level of cash and prefer internal sources of financing, which is in line with the principles of trade-off theory and pecking order theory.

Several theories have been developed and discussed on the issue of what determines target or holding level of cash by corporations. Several studies were conducted with the U.S., Euro, Asian and other international samples and researchers tried to find out the determinants using two theoretical models: the trade-off model Miller-Modigliani (1958) and the pecking order model (Myers and Majluf, 1984). A very popular trade-off theory identified that, firms will consider tax-shield and bankruptcy cost for an optimal capital structure. When the benefit is tax-shield, the cost included financial distress and cost of refinancing. In a perfect Miller-

Modigliani market, holding larger cash is not very important as they have easy access to the capital market. Cash holding may be actively managed by managing firms cost and benefit. Pecking order theory, on the other hand leads the manager to choose the least expensive source of financing.

This theory also talks about dividend payment, nonpayment, interest payment and deficit financing. Agency theory and signaling hypothesis both emphasise upon agency cost due to manager's reckless decision and agency conflict, dividend payout decision and the ultimate debt/asset ratio of the firm. Among all the theories, trade-off and pecking-order are recognized as most relevant theories with corporate cash holding determinants (as cited by Islam in his work titled Manufacturing Firms' Cash Holding Determinants: Evidence from Bangladesh, 2012).

Previous studies have shown that companies in developing nations are holding excessive cash for reasons that include political instability, planned offshore investments, anticipated future investments and acquisitions and labor unrests in some sectors such as mining. Other reasons include anticipated variations in business performance in terms of sales, changes in banks' interest rates, and increased capital needed to fund planned future expansion (Mittner, 2013). Corporate liquidity policies are critical both in finance theory and the applied corporate world (Ali & Yousaf, 2013).

Cash holding has its merits and demerits and firms are expected to hold an optimal level of cash that enhances shareholder value. With corporate cash holdings on the rise, there is a need to know what informs managers of different firms of the optimal levels to maintain. Stakeholders and users of financial information of companies need to know factors that influence the level of cash holdings. The main objective of this study therefore is to explore the rationale for entity cash management in Nigeria.

Review of Related Literature

Ogundipe, Salawu & Ogundipe (2012) examines the determinants of corporate cash holding f non-financial quoted firms in Nigeria using a sample of fifty-four non-financial quoted firms listed on the Nigeria Stock Exchange for the period 1995-2009. The study finds evidence supportive of a target adjustment model and that firms cannot instantaneously adjust towards the target cash level owing to cost implication.

Nhan (2016) present a review of the relationship between cash holding and corporate governance mechanism. The study finds that ownership structure, board structure and regulations influence the cash holding level, in transition economies.

Jamil, Anwar, Afzaal, Tariq & Asif (2016) posit that firm size, board size, net working capital and investment significantly affect the corporate cash holdings. Debt structure, leverage and return on asset are non-significant and have negative association with cash holdings.

Kariuki, Namusonge & Orwa (2015) studied the opportunity costs of holding cash, cash abuse as a tool for obtaining the controlled self-interests and he higher agency costs. The study established that there is negative and insignificant linear relationship between growth opportunities and corporate cash holdings. The study also revealed that leverage is a significant positive determinant of corporate cash holdings in line with the precautionary motive. In regard to firm size, the study findings indicate that firm size positively determines corporate cash holding. Further, the study revealed that there is a negative linear relationship between likelihood of financial distress and cash holdings. The findings also confirmed a positive relationship between cash flow variability and corporate cash holdings. The study concluded that; leverage, firm size, likelihood of financial distress and cash flow variability determine corporate cash holdings among private manufacturing firms in Kenya.

Aiyeg busi & Akinlo, (2016) examine the effect of cash holdings on the performance of firms in Nigeria over the period 2001-2012. The study adopted the generalized method of moments in analyzing the data. The results of the estimation show that cash holding has significant positive impact on firm performance. In addition, the results revealed that cash flows, growth opportunities, size, and net working capital exert negative impact on firm's performance, while debt repayment is positively related to firm's performance. The study conclude that a good financial performance of the firm is an outcome of vast corporate cash holdings. Their study noted that the absence of effective liquidity management will cause cash shortages and will result in difficulties in paying obligations, which negatively affects the firms' profitability.

Hofmann (2006) investigated the determinants of corporate cash holdings of non-financial firms in New Zealand. He found the main determinants of corporate cash holdings as growth opportunities, availability of liquid asset substitute, cash flows variability, dividend payments and leverage in New Zealand firms. Cash holdings are positively associated with growth opportunities and cash flows but negatively associated with large dividend payments and liquid asset substitutes.

Saddour (2006) observed a sample of 297 publicly traded French firms for the period of 1998-2002, through Regression analysis. Saddour found that when activities are risky and the levels of their cash flow are high then French firms increase their cash level, and reduce it when they are highly leveraged. Mature companies hold lower cash levels than growing companies. For growing companies, there is a negative relationship between cash and the following firm's characteristics: size, level of liquid assets and short term debt. The cash level of mature companies increase with their size, their investment level, and the payout to their shareholders in the form of dividends or stock repurchases, and decreases with their trade credit and their expenses on research and development (as cited by Jamil, Anwar, Afzaal, Tariq & Asif, 2016 in their work titled "Determinants of Corporate Cash Holdings: Empirical Analysis of Pakistani Firms".

Benjamin & Samuel (2012) collected data sample from 1999-2008 of listed companies in Ghana. The purpose of the study was to find the relationship between bank cash holdings and the net working capital. They used the random effects technique for the analysis of findings and found that profitability has a positively significant relationship with cash holdings. They found that bank size, capital, cash conversion cycle and collection period of debtors was negatively related with cash holdings of bank (Jamil et al, 2016).

Jamil, Anwar, Afzaal, Tariq & Asif (2016) explored the determinants of corporate cash holdings of non-financial firms among diverse firm sizes and diverse industries in Pakistan. The study used a sample of 50 Public Limited Companies listed at Karachi Stock Exchange over the period of 2012-2014. The study applied descriptive statistics, correlational and multiple regression technique. The study concluded that firm size, board size, net working capital and investment significantly affect the corporate cash holdings. Debt structure, leverage and return on asset are non-significant and have negative association with cash holdings.

Ogundipe, Ogundipe & Ajao, (2012) shed light on the empirical relationship between cash holding and firm characteristics. A sample of 54 Nigerian firms listed the on Nigerian Stock Exchange for a period of 15 years (from 1995-2010) was selected. This study applied the correlational research design. The results of the study show that cash flow, net working capital, leverage, profitability and investment in capital expenditure significantly affect corporate cash holdings in Nigeria.

For the purpose of this study agency theory was adopted. In financial management, the agency theory addresses the problems that often arise between the principal (shareholders) and the agent (management). The agent has the duty to act and conduct the firm's business in a way that maximizes shareholders' wealth. Researchers have found that, among other things, there can be a conflict between maximizing shareholders' wealth and maximizing management remuneration. Another conflict arises when the principal and the agent have contrasting risk outlooks (Dinh Pham Anh, 2013). Regarding corporate cash holdings, the agency theory includes two suppositions: a) the free cash flow hypothesis b) the risk reduction hypothesis as cited by Chireka & Fakoya, 2017 "the determinants of corporate cash holdings levels: evidence from selected South African retail firms".

The free cash flow hypothesis envisaged that managers are more inclined to stock up cash, as it increases the assets under their control. This, in turn, affords them more unrestricted investment prerogative. With a stockpile of cash, managers can relatively easily avoid the capital markets and do not have to comply with their transparency requirements regarding possible investments (Ferreira and Vilela, 2004). "Managers' selfish behaviors can include lavish spending on luxurious offices and unjustifiable mergers and acquisitions (Chireka & Fakoya, 2017).

The risk reduction hypothesis addresses the conflict that might occur when management and shareholders have different attitudes to risk. "Since corporate cash holdings can be viewed as risk-free investments, a risk-averse and self-interested CEO can allocate more firm assets to

corporate cash holdings to reduce firm risk at the expense of giving up some positive NPV but risky projects, which is not beneficial to share-holders" (Tong, 2006). In his study, Tong (2006) investigates how the CEO's risk incentives influence the level of a firm's cash holdings, where the CEO's risk incentive is measured by "the sensitivity of the value of executive stock options (ESO) to the volatility of stock returns" (Chireka & Fakoya, 2017).

VARIABLES AND METHODS

This study examined non-financial companies quoted in the Nigerian Stock Exchange. A sample of fifty 50 companies was selected using convenient sampling method. The sampled firms cut across ten sectors out of thirtyone sectors in the Nigerian Stock Exchange. Financial and non-quoted companies were excluded from the study. Non-quoted companies were excluded because they do not publish their financial statements while the financial institution were excluded for the reason that their cash holding level is primarily determined by the Central Bank of Nigeria (CBN).

Data were obtained for a period of 22 years from 1995 through 2016 from Nigerian Stock Exchange fact book and financial reports of the companies.

Multivariate regression analysis was used to examine how changes in the independent variables influenced changes in the dependent variable. Eviews 7 was used to analyse the data. Specifically, the following linear regression model was applied.

THE MODEL

The model adopted for this study was consistent with Ogundipe et al, 2015 and Kariuki et al, 2015 but Return on total asset (ROA) and net-working capital variables were added to this work for wider scope.

$$CH = \beta_o + \beta_1 NWC + \beta_2 LEV + \beta_3 GO + \beta_4 CS + \beta_5 ROA + \beta_6 INVF + \beta_7 CFV + \varepsilon$$

Table1. *Description of Variables*

Variable	Description
CH	Cash Holding
NWC	Net Working Capital
LEV	Leverage and Debt Structure
GO	Growth Opportunities
CS	Company Size
ROA	Return on Total Assets
INVF	Investment in Fixed Assets
CFV	Cash Flow Variability
ε	Error term
βo	Intercept
$\beta 1$- $\beta 6$	Slope coefficients representing the influence of the associated independent variable on the dependent variable

Table2. *Variables Measurement*

Variables	Measurement
Cash Holding	Ratio of total cash and equivalent items to total assets
NWC	Ratio of net current assets less cash and cash equivalents to total assets less cash and equivalents.
Leverage	Total liabilities/Total assets
Growth Opportunities	Yearly sales growth rate
Company Size	Natural logarithm of total assets
Return on Total Assets	Net profit/Total Assets
Investment in Fixed Assets	Investment in fixed assets (INVF) is measured as ratio of variation in investment on fixed asset to net total asset.
Cash Flow Variability	Standard deviation of the pretax profit plus depreciation divided by the total assets over a period of 22 years

DATA ANALYSIS AND RESULT

The probability result of the individual variables in the model shows that cash holding is dependent on corporate size, Leverage, Net-working Capital and return on total assets at the probability value of 0.0004, 0.0447, 0.0515 and 0.0034 respectively. The value of the t-statistics

for these variables is also statistically significant. The coefficient of all the variables here is positive except for ROA that has negative coefficient, thus as return on capital increases the company cash holdings decreases, that is, invest more and or pay out more dividends to investors. The result also reveal that cash holding of companies does not depend on cash flow variability, growth opportunity and investment in fixed assets. The result of Durbin-Watson statistics with value 2.113203 shows that the model for this study is not suffering from serial correlation. Also the prob (F-statistics) with value 0.000000 and F-statistics value of 108.4169 show that the variables statistically fit the model very well.

Dependent Variable: CH				
Method: Panel Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.404598	0.002804	144.2896	0.0000
DCFV	0.001712	0.006346	6.269738	0.7874
DCS	0.000659	0.000743	15.887526	0.0004
DGO	-0.003952	0.025555	-0.154651	0.8771
DINVF	0.004810	0.015985	0.300922	0.7635
DLEV	0.009509	0.016094	0.590863	0.0447
DNWC	0.000780	0.001146	9.680238	0.0515
DROA	-0.000695	0.025342	-18.027440	0.0034
R-squared	0.544498			
Adjusted R-squared	0.540306			
F-statistic	108.4169			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.113203			

UNIT ROOT TEST FOR STATIONARY

	Level		**First difference**	
	Z-Statistics	**Prob.**	**Z-Statistics**	**Prob.**
DCFV	0.4664	0.6742	-13.5026	0.0012
DCH	2.9641	0.5693	-18.8041	0.0032
DCS	–2.2675	0.7215	-16.6839	0.0231
DGO	2.0685	0.8797	-27.8072	0.0005
DINVF	2.0851	1.0000	-16.4703	0.0011
DLEV	–4.1556	0.8891	21.4244	0.0001
DROA	3.0875	0.8797	-21.1191	0.0000
DNWC	4.0861	1.0000	–9.2731	0.0022

Unit root test was conducted using the Augmented Dickey and Fuller test to test for serial correlation between the variables. The root test result shows that all the variables were serially correlated, which necessitated the need to subject the variables to first difference which unlimited in it removal (normal)

CORRELATION MATRIX

Variables	**DCH**	**DCFV**	**DCS**	**DGO**	**DINVF**	**DLEV**	**DROA**	**DNWC**
DCH	1.0000							
DCFV	0.7932	1.0000						
DCS	0.9213	0.9235	1.0000					
DGO	0.6341	0.4519	0.6598	1.0000				
DINVF	0.7823	-0.5621	0.6725	0.5952	1.0000			
DLEV	-0.2312	0.2347	0.8936	0.4929	0.2776	1.0000		
DROA	-0.5719	0.4537	0.7852	0.6732	0.0126	0.6540	1.0000	
DNWC	0.7365	0.5981	0.9654	0.4481	0.3785	0.7574	0.7178	1.0000

The result of correlation matrix for the variables in the model indicate a strong correlation among the independent variables which may violate the working assumptions of our estimation technique and thereby produce unrealistic results. Here, we test for the likely occurrence of

multi-collinearity among the independent variables using the correlation matrix. The result indicates a positive correlation between cash holding (CH) and other variables in the model except for leverage (LEV) and return on total assets (ROA).

An overall consideration of the result of the correlation coefficients indicate that effect of multi-collinearity is not present in the model. Though, the result is not conclusive, but the magnitude of correlation is statistically significant.

DESCRIPTIVE STATISTICS

	DCFV	DCH	DCS	DGO	DINVF	DLEV	DNWC	DROA
Mean	-0.001732	0.003427	0.033487	-0.000272	-0.001370	-0.000611	0.049524	0.000183
Median	0.045890	0.011000	0.911000	-0.001000	0.024000	0.090000	0.000000	0.011000
Maximum	0.819060	0.426000	6.852000	0.267000	0.326000	0.311000	6.000000	0.200000
Minimum	-1.021260	-0.374000	-7.781000	-0.219000	-0.301000	-0.411000	-6.000000	-0.200000
Std. Dev.	0.443283	0.169959	3.785564	0.130451	0.187414	0.200942	2.466953	0.132282
Skewness	0.143695	-0.001329	-0.193014	0.199770	-0.074733	-0.320723	0.085947	-0.001362
Kurtosis	2.190332	3.787699	2.393456	2.057865	1.707499	1.709741	2.521011	1.789145
Jarque-Bera	32.29425	27.14582	22.61494	45.81721	74.06436	90.83468	11.33029	64.14521
Sum	**-1.818830**	**3.598000**	**35.16100**	**-0.286000**	**-1.438000**	**-0.642000**	**52.00000**	**0.192000**
Sum Sq. Dev.	**206.1283**	**30.30155**	**15032.69**	**17.85133**	**36.84494**	**42.35637**	**6384.065**	**18.35586**
Observations	**1050**	**1050**	**1050**	**1050**	**1050**	**1050**	**1050**	**1050**

The result of the descriptive statistics provides a general overview of the characteristics of the data. The fairly low standard deviations for the series indicate that the deviations of actual data from their mean values are very small. They also reveal that the series are negatively skewed except for cash flow variability (CFV), growth opportunity (GO) and net working capital (NWC). The sum of the mean of cash holding of all companies analysed is 3.59800, with the standard deviation of individual data set varying from the mean with 3.785564. The independent variables have reasonable mean values compared to the maximum and minimum values obtainable.

The result of least square regression method indicates that cash holding depends on company size, leverage, and net working capital with positive relationship except for ROA that has a negative relationship with cash holding. This means that as company size, net working capital and leverage increases, cash holding also will increase and the negative relationship between cash holding and return on total assets shows that as return on total assets increases, the company tends to reduce its cash holding and either invest more or increase its dividend payout. Though the result of this finding negate the agency theory that states that highly geared companies do not always hold much cash as there may not be any reason to have high debt if the company has much cash at its disposal. But this positive relationship between cash holding and leverage can also be as result that the companies hold much cash to be able to reduce the debt ratio or meet urgent demand for repayment of debts.

SUMMARY OF CONCLUSION FROM LITERATURE REVIEW

Available literature indicate the following: The primary task of the cash administrator is to find the right balance between profitability and cost (Martinez-Shola et al, 2013); The motive for holding cash are transactionary, precautionary and speculative (Keynes, 1936); Serbian companies tend to hold optimal level of cash and prefer internal sources of financing (Racie & Stanisic, 2017); Companies in developing nations hold excessive cash because of political instability, planned offshore investments, anticipated future investments and acquisition and labour invests; Firms cannot instantaneously adjust towards the target cost level owing to the cost implications (Ogundipe et al, 2012); Ownership and board structure as well as regulations influence the cash holding level in transition economies (Nhan, 2016); Firm size, board size, working capital and investment determine the size of cooperate cash holdings (Jamil et al, 2016).

Other study also shows the following: Leverage, firm size and variability determine the level of cooperate cash holdings (Kariuki et al 2015); Debt repayment is positively related to firms' performance. Good financial performance of a firm is an outcome of vast cooperate cash

holdings (Ayegbusi & Akinlo, 2016); The main determinants of cooperate cash holdings in New Zealand are growth opportunities, availability of liquid assets substitute, cash flows, variability dividend payments and leverage (Hofmann, 2006); When activities are risky and the levels of their cash flow are high, French firms increase their cash level (Saddour, 2006); Bank size, capital, cash conversion cycle and collection period of debtors do not determine cooperate cash holding in listed companies in Ghana (Jamil et al, 2016); Cash flow, net working capital, leverage, profitability and investment in capital expenditure are determinants of enterprise cash holdings in Nigeria (Ogundipe, Ogundipe & Ajao, 2012).

CONCUSSION AND RECOMMENDATIONS FROM THIS EMPIRICAL STUDY

The result of the regression analysis shows that cash holding is dependent on corporate size, leverage, net working capital and return on total assets.

From the correlation matrix, cash holding level is positively related to cash flow variability, company size, growth opportunity, investment in fixed assets, leverage, return on assets and net working capital

Cash holding depends on leverage and net working capital. Companies maintain much cash to be able to reduce the debt ratio or meet urgent demand for repayment of debts.

Corporation should strive to maintain an appropriate level of cash holding as dictated by company size, leverage, net working capital and return on total assets.

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