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Cash Holding and Value of Firm: An Empirical Study of Deposit Money Banks in Nigeria Stock Exchange

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Abstract

Over the years, the exact amount to be held as cash by commercial banks in Nigeria has been a critical issue that affects their value. Therefore, this study aims to examine the extent to which cash holding and firm value of 13 Deposit Money Banks that are listed on 31 December 2022 under the umbrella of regulatory Nigeria Exchange of Stock. The period covered in the course of this study is 11 years which consist of 2012-2022. In measuring, the firm value was connected to the value of market equity plus debts of total divided by the summation of all assets. Cash holding is measured as; Profitability measured through the gross profit margin of the firm, growth sales measured via (total sales-total sales in its previous period)/ total sales. The variable of assets growth is also measured (total asset - total assets in its previous period)/ total asset. The research design of Ex-post facto was employed in this study. Regression analysis, random effect, fixed effect, and variance inflation factor tests were applied for analysis. After testing the hypotheses, it demonstrated that among the variables in this study, profitability and growth in sales which constitutes the independent variable have significant and positive effects on cash holding. Along the line, growth in assets has no significant influence on the cash holding of the firm. Hence, the current study makes the recommendations in line with study results of regression analysis and other testing that; bank managers should advise the banks of receiving and making deposits available to use more of growth in sales variable and profitability in their business since it improves the value of the firm. More importantly, they can reduce the quantum growth of asset use as it will in any way improve the value of the firm.

Keywords: Firm Value, Profitability, Sales Growth, Assets Growth

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Introduction

Globally, firm value is an important factor that investors look at before they invest in any organization. As such, it will translate not only to the investors that such an organization is doing well but also to the public at large. That is to say that firm value can be achieved when the stock prices increase. Therefore, firm value plays a vital role in determining the extent to which investors, creditors, and other stakeholders will patronize the firm. This is because, the price of the stock is a function of firm value (Fuadah & Kalsum, 2021). As the value of a firm is seen to be important for all stakeholders in the business, examining such value of firms is important. The firm value plays a vital role in shaping the business and making money available in the country. Hence, for any business organization, a firm's value is capable of attracting the public to invest when they know that the return on their investment is going to be appreciated. Therefore, it is not a surprise that the poor value of firms in commercial banks especially in Nigeria is affected some time and that can somewhat lead to deteriorating activities of economic instability, inconsistency in terms of competition, return on the investment of stockholders, and among others (Odo & Udodi, 2022). Thus, to maximize the agency's interest, there is a need for the managers involved to take good measures such that the interests of all the participants are resolved (Endri & Fathony, 2020). More importantly, the firm value of Nigerian money deposit banks has been performing abysmally due to cash-holding-related problems. The problems of poor performance among these banks have been a subject of considerable discussion which also affects firms' value (Amugo, 2015).

However, looking at it from the history antecedent, money deposit banks in Nigeria and firm value have generated a serious issue and that has paved the way for the researchers to have interest in the subject area. In an attempt to achieve firm value in the said industry, the Apex banks which have regulatory policy conducted a test of Liquidity Stress (LS) as contained in the regulatory and climax banks report of financial stability. This report was released on 31st October, 2015 to correct the cash irregularities that undermine the activities or operations among deposit banks in Nigeria. This indicates that by standard some of the accepting and giving loans banks to the customers could not perform abysmally. As such, they fall beneath the threshold of requirement of capital set up by the Apex bank in the country. Specifically, it revealed that the test was conducted to evaluate the flexibility of the cash flow system. Similarly, the extant literature confirmed that as of the end of 2014, 30 December 2014 to June 30th, 2015 cash holding for the banks that are affected could not meet up as expected (Amugo, 2015). Unlike firm value, assets growth, sales growth and profitability are the determinants that translate to the effective value of the firm if put into consideration. Indeed, cash holding is important for money deposit banks in Nigeria, which within the COVID-19 outbreak firms especially in Nigeria face obstacles in raising funds externally. Thus, this has gone all the way to affect the

activities of bank operation in Nigeria. By implication, when banks are affected it will have a negative effect as the banks concerned cannot receive any deposits from the prospective customers before the disbursement to those that would like to execute one of the businesses or the other.

In addition, more problems were encountered with the firm value of banks in Nigeria as the said banks lost eighty profit to the tune of 80 out of a hundred (Agabi, et al., 2016). Again, it was demonstrated that within April, 2016 cash holding in the whole business of the banks dropped to the tune of 17% to 16.5%. Surprisingly, the sudden Profit before Tax (PBT) of the organization was not really promising as the value was reduced to N222 Billion in the month of April 2015 to N198 billion for the month ended April 2016. However, to crown it all, both return on assets and return on equity that decides the financial strength of any firm remained 2.17 and 16.17 respectively. In sum, all these inconsistencies happened within the time frame of February 2016 which was less than 2.42 and 19.39 in the same period of 2015 accounting year.

Specifically, the overall banking Profit derived after tax deduction for the first quarter of 2016 was a deficit at N 90.7 billion which contradicts 100.59 billion for the matching period in 2015. That is to say that all these will have a bearing factor on the firm value as the shareholder's interest is on their return on their investment. From these scenarios, it has been demonstrated from inquiry that firm value in the Nigerian deposit banks have been a major concern to investors and other business participants. The problem that has been affecting firm value while carrying out its operation is connected to profitability, sales growth, and asset growth. However, special attention has to be given to the above variables such that they will shape the value of the organization concerned. Unlike other studies before it, the present study's major aim is to investigate the effects of profitability, sales growth, assets growth factors, and value of firms' relationship among the commercial banks in Nigeria.

Concept Review

In every study, conceptualization of study variables will give the study the direction. Therefore, the concepts to be discussed are firm value, profitability, growth in sales and growth of assets.

Concept of Firm Value

Firm value as a concept is concerned about the worthiness that investors enjoy. It is defined as the end results which the business participants are capable of benefiting from within a period of time. Conceptually, there is no doubt that a firm value can only be achieved when the firm maintains a high spirit of profitability, sales growth and assets growth as the case may be. In short, the value firm possesses the main reason before the stock brokers will invest their money in any business. It is pertinent

to understand that the higher the aforementioned factors above improved the more the firm value of the firm is also expected to appreciate (Widagdo, et al., 2020).

Concept of Profitability

Generally, the health of any organization depends on the level of the profitability and value of the firm. In this respect, profitability can be viewed conceptually when a company's income derived in the course of business transactions is above the expense incurred within the accounting period. Therefore, as the name implies, it can be said that, when firms acquired success in terms of yielding more turnover in their business practices could be regarded as profit (Aliet, 2012; Mesfin, 2016). Literature indicates that, for a business concern to be healthy, competitive in nature and to survive in the long run the level of profit must be maintained (Winarso & Christina, 2019).

Concept of Sales Growth

Sales growth is another form of factor that is very similar to profitability construct. Controversies arose over the question of what constitutes sales growth of the firm. For the purpose of clarification Zhou (2014) asserted that sales growth issues are connected to the ability of the firm to use its advantages to multiply wealth in terms of product diversification, doing something differently, uniqueness in serving customers and establishing good customer relationships. Thus, all these factors if into consideration will improve sales therein. To measure the conceptual nature of this variable, it was adopted from the work of Zhou (2014) as the total sales made for the accounting period minus the previous sales divided by the current sales.

Concept of Growth of Assets

Batchimeg (2017) studied on assets of growth as another conceptual scenario within organizational theory related to firm value. He defined the concept of asset growth when a firm can turn around and produce more products at expense of limited resources by reducing risk occurrences. In support of this conceptual review, Mesfin (2016) takes a different dimension as to the rationale behind such claims of growth of assets. Conceptually, he regards growth of assets by the firm as the swift change of the assets deployed by the firm within a particular period.

Theoretical Review

In every empirical research, theory is very important as it will shape the position of the investigators about the theory that is suitable for the study under investigation. After the extensive review of different studies, free cash flow theory was seen to have a significant relationship between the variables of the study. The variables which the theory explains are holding of the cash as dependent variable and value of the firm as

independent variable of financial institutions that interplay between summit banks and depositors within Nigeria context. By convection, all theories have their traces and philosophy. Therefore, philosophically, the theory of cash flow has its origin which can be traced to Jensen's (1986). In his work, he made the deduction and attempted to expatiate as to the rationale behind organization and individuals holding cash. In addition, Jensen, (1986) demonstrated that business organizations hold more cash to upsurge properties. By doing so will give them competitive influence to take more business opportunities that come on their way. The work of Arslan, et al., (2006); Deng, (2014); Zhang & Ying, (2012), have used the theory of cash flow in their empirical research. Hence, the validation as to the reason for using the theory of free cash flow is obtainable as the dependent variable (value of the firm) and independent variable (holding of the cash) are common with other previous research studies. As such, the theory used in this study is free flow cash theory.

Evaluation of Developing and Empirical Hypotheses

This section focused on the reviewed literature and the formulation of hypotheses about the impact of banks that accept deposits and provide loans to Nigerian consumers on the value of their firms and cash holdings. In particular, the variables include the company value, which is the dependent variable, and the growth of assets, sales, and profitability, which are the independent variables.

Revenue and Company Value

Nnubia, et al., (2020) conducted a study on cash holding and firm profitability of listed consumer and industrial goods firms in Nigeria, South Africa and Kenya. The study sample ranges as 33 for Nigeria, 12 for South Africa and 7 for Kenya for a period of 8 years (from 2011-2018). This study applied ex-post facto research design. By virtue of data analysis, the data collected were analyzed using Pearson product-moment correlation matrix. The results revealed that in South Africa, profitability was statistically significant with firm value while in both Nigeria and Kenya, it was statistically insignificant. Such variability in results should be expected as the results were conducted in a different geographical setting.

The instruments used for such empirical study are inferential analysis and regression analysis. Important to this study is the work of Ali, et al., (2016), who researched cash holding of 30 textile companies in Pakistan. They studied the extent to which profitability influences cash holding. Thus, the study period was 2006-2013. Further, their results showed a significant influence to the literature in demonstrating the positive relationship between the measures of return on assets with firm value. However, a different cultural background is needed for more investigation of cash holding and firm value. Therefore, in this regard, Mesfin, (2016) investigated specific attributes and firm values of some selected Ethiopian businesses that are into

manufacturing. Using a sample of 15 companies from 2009 to 2014. As a result of their research effort, profitability for the business has been observed to have an important influence on the value of the firm within that period of the study.

H_{01}: The value of the Nigerian deposit money bank industry is not significantly impacted by the profitability.

Growth in Sales and Firm Value

In a more recent time, Thomas, et al., (2022) investigated the sales growth, firm size, and firm value among consumer goods companies in Indonesia. In their study return on assets was used as the moderating variable. The study period at the time was from 2015 to 2020. The sample is ten consumer goods companies based on the purposive sampling technique. The research method is using SPSS application to run the regression analysis which covers descriptive statistics, classical assumption tests, multiple linear regression analysis, moderation regression analysis, and the hypotheses tests. Thus, among the variables of the study, it was demonstrated that sales growth results have a negative relationship

Similarly, Jangashi, et al., (2023), extended their study beyond that of Thomas et al., (2022). Empirically, concentrate on the growth of sales, profitability and firm value of the consumer goods industry listed on Indonesia stock exchange in 2018-2020. The total number of their sample is 165 companies. By virtue of methodology, they employed quantitative and multiple linear regression. After rigorous investigation, it was revealed that sales growth has no significant association with firm value.

H_{02}: The value of the Nigerian deposit money bank industry is not significantly impacted by the growth of sales.

Assets Growth and Value Firm

In a different development, Barine, et al., (2023) used a sample of 51 listed companies from 2010 and 2019 to provide more empirical evidence about the relationship between the assets and firm value of listed companies in Kenya. The study used secondary data which was obtained from the audited financial statements. Through the use of panel data regression in their research, it was reported that the asset growth variable was positively correlated with firm value.

In 2017, Batchimeg conducted a study on publicly traded enterprises in Mongolia that deal with stock. To test a theoretical association between asset growth and financial success, 100 listed companies over a four-year period (2012-2015) were sampled. The statistical investigation showed that the asset growth variable affects the companies' financial success.

H_{03}: The value of the Nigerian deposit money bank industry is not significantly impacted by the growth of sales.

Methodology

For empirical analysis, quantitative research has been applied, based on the nature of the research. Before testing the hypotheses of any study, Sugiyono, (2014) has the following observation that positivism is subjected to quantitative study as it requires the testing of the observation to predict the relationship therein among the variables. As such, this study used positivism as it fulfilled the requirements among them as follows; population samples, sampling techniques, and collection of data. Importantly, the observations of the study are made within a certain period and the data are analyzed to show and represent the variables. The research design adopted in this study is ex-post-facto. In this study, multiple regressions, correlation, and descriptive statistics were therefore employed. In addition, the following choices were taken into consideration: ordinary least squares (OLS), fixed effect model (FEM), random effect model (REM), and hausman tests. Secondary data and the annual audited accounts of money deposit banks in Nigeria from 2012 to 2022 are used in this study. The justification for choosing this period is that the data of such banks that constitutes the unit of analysis are available during the study period

Thirteen money deposit banks were used through census sampling technique and whose financial records were available on the Nigerian Exchange as at 31st December, 2022. Specifically, independent variables in this study are as follows; profitability of the firm, growth of sales and growth assets. Meanwhile, the total equity of the firm plus debts at that period divided by the total assets of the firm measured the firm value as a dependent variable. For data analysis effectiveness, the study employed the STATA version of 15.0.

Regression Model

FV = F (PRF, SG, AG). The model was derived from the work of Cuong, Quan, and Lan (2018).

By expression, the above variable can be expressed as the function of

$$FV = \alpha + \beta_0 + \beta\,(PRF) + \beta\,(SG) + \beta\,(AG) + \beta\,(PRF) + e \ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Where FP= the ratio of financial performance for the firms in the industry is α = an intercepts. β = Coefficient variable-variable model CH=Cash holding, PRF= Profitability, AG= Assets growth, SG= Sales growth and e= error term.

Table 1. Variables and Measurements for the study

Variable	Measurement	Basis
Firm value	Total equity of the firm plus total debts/total assets	(Nnubia, et al., 2020; Ali, et al., 2016; Banafa, et al., 2015; Mesfin, 2016).
Profitability	Gross profit margin	(Ali, et al., 2016; Mesfin, 2016).
Growth in sales	(Total sales-total sales in its previous period)/ total sales	(Jangashi, et al., 2023; Thomas, et al., 2022).
Assets growth	(Total asset - total assets in its previous period)/ total asset	(Batchimeg, 2017; Olatunji & Adegbite, 2014).

Source: Literature review

Data Validation for the Study

Empirically, the choice of fixed effect and random effect in research depends on the outcome of the Hausman test. By doing so, the study has carried out a Hausman specification test. Upon the completion of this test, the result demonstrated the choice of random effect model as the result is not significant. Hence, a significant probability suggests that the fixed effect model should be analyzed while a not significant probability suggests that the Random effect model should be analyzed in every study. The benchmark for accepting the Hausman test specification is via the outcome of regression Generalized Least Square (GLS). That is, if the coefficient of probability (Prob>chi^2) is less than 0.1 or greater than 0.1. In this study, a random effect is chosen as the outcome Hausman specification result is not significant as Prob>chi^2= 0.0171 which is not significant at 0.0000.

Table 2. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max
TQ	115	9.8807	2.2308	-2.7908	9.3508
PROF	115	1.8507	4.2707	-5.2607	1.7808
SGROWTH	115	9.6508	2.2309	0	1.341
AGROWTH	115	1.7407	4.8407	-2.2208	1.7908

Source: STATA Version 15.0 output, 2023

In table 2, 115 constitutes the observations of the study. The ratio of total debt to total assets plus the market value of equity represents the firm's value, and it is at 9.88. This, indicates that the cost associated with holding cash for running the business of the money deposit banks are relatively high (Shamsuddeen & Ibrahim, 2022). By extension, this will remind the banks to think on how to handle cash for doing business

because of some factors that behind such cost of handling cash. Furthermore, the result of table 2 above demonstrated that tobin-q (firm value) are 1.85, 9.65, and 1.74 as their maximum and minimum respectively. This implies that the cost of holding cash by the banks is relatively low and could enhance firm value. Therefore, it will motivate the bondholders to invest in the business as their investment return is guaranteed, Unlike the firm value, profitability, sales growth, and asset growth, and show 9.88, -38.13, and 50.48 as the average value about financial performance. Thus, the impression of the analysis is that some banks in Nigeria under the umbrella of money deposit banks have accounted for better financial performance, and that has translated to firm value. Indeed, -5.26 and 1.78 serve as minimum and maximum values for profitability as of the time of this study. The minimum and maximum values for sales growth are 0 and 1.34. While the minimum and maximum values reported by the descriptive analysis are -2.22 and 1.79 for the asset growth. It means that the joint efforts of all the independent variables in the study are connected to yielding more dividend as all maximum values are positive. In other words, these will also prompt the shareholders to invest more in the banks.

Table 3. Model Regression Results (OLS)

Variables	Pooled OLS	Random Effect	Fixed Effect
PROF	3.33 (0.001)***	3.33 (0.001)***	3.56 (0.001)***
S.GROWTH	14.31 (0.000)***	14.31 (0.000)***	14.17 (0.000)***
A.GROWTH	0.93 (0.352)*	0.93 (0.350)*	0.79 (0.434)*
-CONS	-0.03 (0.973)*	0.03 (0.973)*	-0.24 (0.814)*
F-Statistics	47.00 (0.000)	R^2 = 0.8264 (within)	R^2 = 0.8266 (within)
R-Squared	0.809	R^2 = 0.1492 (among)	R^2 = 0.1442 (among)
Adjusted R^2	0.8038	R^2 = 0.8090 (overall)	R^2 = 0.8088 (overall)

Source: STATA Output, Version 15.0, 2023

Table 3 above, shows that OLS random effect and fixed effect of regression analysis were conducted as the best for this study. The (R^2) determination coefficient among the variables of the study indicates that 80.90% is for tobin-q. That means the Tobin-q can be explained as the variation on the explanatory variables (firm value) in the model. Therefore, other factors not captured in the model constitute 19.1%. In addition, the random effect result is more efficient as the result is 80.90% which means only 19.1% changes in firm value are explained by other variables. The model is statistically significant at 1% level and fit for the study.

The regression analysis results show that 3.33% was obtained in respect of the profitability variable. However, the result confirmed the strong relationship at 3.33% with profitability and significance at 0.001. The positive relationship that exists

between profitability and firm value indicates that profitability is a contributing factor that leads to firm value. The current study findings are in agreement with the study of Monye-Emina & Enofe, (2015); Shamsuddeen & Ibrahim, 2022) because their result too confirmed the existence of a significant and positive association between profitability and firm value.

Furthermore, sales growth as another independent variable has a positive relationship with firm value (Tobin-q). The justification for this is that the coefficient of sales growth is 14.31 with a p-value of 0.000. The study finding is consistent with the free cash flow theory. The theory stands as a base where there is a flow of cash from one hand to the other. Therefore, this study adopted the theory. These study findings are consistent with the study of Ali, et al., (2018); Khan, et al., (2018). In contrast, Cuong, et al., (2018); Meseret & Getahun (2017) studies are not in agreement with the current study findings as the results of their studies are negatively related with their study variables.

With respect to asset growth measured as the total assets of the preceding year minus the base year and divided by the current year. The study established the positive relationship in terms of (Tobin-q) at 0.93% with a p-value of 0.352. After a regression analysis test, the result revealed that asset growth does not constitute more as the variable that influences firm value. The study is consistent with the study of Ali, et al., (2016); Abushammala & Sulaiman, (2014); Banafa, et al., (2015) but inconsistent with Mesfin (2016). However, it is not a surprise the variability of such results, these could be attributable to the choice of variable, methodology of the study, time frame of the study, and the like.

Table 4. Hausman Specification Test for Fixed Effect and Random Effect

Coefficients	**(b)**	**(B)**	**(b-B)**	**sqrt (diag (V_b-V_B))**
	fe	Re	Difference	S.E.
PROF	1.617617	1.464741	0.1528762	0.1346648
SGROWTH	0.0686139	0.0685744	0.0000395	0.0010069
AGROWTH	0.2894799	0.3357001	-0.0462203	0.1000109

b = stable under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic

$chi^2(3) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)$

$= 6.67$

$Prob>chi^2 = 0.0830$

Table 4 above is a reflection of the Hausman specification test conducted for the study. Specifically, it was conducted on the basis of a fixed effect and random effect test in other established and chosen between the two that are suitable for the study. As shown in the table, the result was confirmed as the probability chi^2 is more than 0.8837. In this regard, the figure which is 0.8837 is above the threshold for the Hausman investigation. Therefore, it is a clear indication that the model that fit this study is a random effect as the prob>chi^2 is greater than 0.05. However, the justification for choosing between random effect and fixed effect is when prob>chi^2 is less than 0.05 or greater. From the result stated above the result favored random effect because the result obtained. That is 0.8837.

Table 5. Factors and Inflation Modification

Variable	VIF	1/VIF
PROF	4.11	0.243123
A.GROWTH	3.54	0.282731
S.GROWTH	1.34	0.746514
Mean VIF	3	

Source: STATA Output, 2023

In empirical research, when a robust relationship among independent variables is found, additional investigation needs to be conducted to check for the existence of Multicollinearity among them (Gujarati, 2004). However, such analysis is connected to the Variance Inflation Factor (Park, 2008).

In an empirical investigation, there is a variance of 1 to 9 and a benchmark of 1 to 5 for components and inflation modification (Gujarati, 2004). Nonetheless, the VIF range of 1 to 9 is employed in this investigation for each explanatory variable. According to Gujarati (2004), any variable having a VIF greater than 9 thus suggests the presence of multicollinearity. The gross profit, asset growth, and sales growth ratios are included in the cash holdings, with corresponding VIFs of 4.11, 3.54, and 1.34.

In addition, there is no indication of multicollinearity in the independent variables based on the results of multicollinearity among the explanatory factors in Table 5. By indication, none of the variable values exceed the threshold of 10. Importantly, factors and inflation modification are not expected to be more than 10. Thus, where such variance is found to exist it has to be addressed (Hair, et al., 2010). The table 5 above indicates that on each explanatory variable the minimum value of VIF is 1.34 which is sales growth and the highest VIF is 4.11which is asset growth. The overall mean (VIF) value (3.00) is far less than 10. The study established that the condition is met as no issue affects all the variables of the study regarding Multicollinearity.

Conclusion and Recommendations

The objective of this study is to examine the relationship between cash holding and the firm value of money deposit banks in Nigeria, as inferred from the empirical research results. Consequently, the following conclusions were drawn: independent variables affect the firm value of the mentioned banks on the Nigerian Stock Exchange in both positive and negative ways. The study's conclusions lead to the following recommendations: (1) To increase company value, the management of these money deposit banks in Nigeria should focus more on asset growth. (2) The organization's management needs to cut expenses to make space for asset expansion, which will increase the firm's value. Specifically, other variables which include profitability and sales growth can still be improved on despite their significant relationship with firm value. Thus, doing this will further strengthen the hope of shareholders to increase the level of their share in the organization as their return on the investment is guaranteed.

However, it is more important to understand that, the policy implications of cash holdings and firm value of money deposit banks in Nigeria can be better obtained when the following are met; increase in monetary policy rate, depreciation of nominal exchange rate and inflation rate negatively affected the banking system stability. Therefore, similar cash reserve requirements and banking reforms need to be improved so as to strengthen banking stability. Overall, in terms of policy implications there is a need for the bank to identify appropriate adjustments in its instruments to achieve macroeconomic stability and banking system stability.

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