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AN EMPIRICAL EVIDENCE ON IMPACT OF CREDIT MANAGEMENT, LIQUIDITY POSITION AND PROFITABILITY OF NIGERIAN BANKING SECTOR.

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ABSTRACT: *The study critically examines the relationship between credit management, liquidity position and profitability of some selected banks in Nigeria using annual data of ten banks over the period of 2006 to 2010. Time series properties of all variables used in the estimation were examined through Augmented Dickey Fuller (ADF) test in order to obtain reliable results. It shows that all the variables were stationary and significant at first differences. The results from Ordinary Least Square (OLS) estimate found that current ratio is positively related to debt ratio and significant at 1% level. This confirms the alternative "risk absorption" hypothesis, which stipulates that efficient credit management enhances firms' ability to create liquidity. In addition, the result shows that ROA has significant positive effect on current ratio confirming the "financial fragility – crowding out" hypothesis which stipulate that the ability of firms' to maintain certain degree of liquidity reduces firms' profitability enhancement. This conclusion has important policy implications for emerging countries like Nigeria as it suggests that when a company's credit policy is favourable, liquidity is at a desirable level and lastly, the findings revealed that companies should ensure the monitoring and regular review of their credit policy and the allowance of cash discounts should be minimized as much as possible.*

KEYWORDS: Credit management, liquidity position, profitability, commercial bank, regression, Nigeria

INTRODUCTION

Credit Management can be viewed as written guidelines that set the terms and conditions for supplying goods on credit, customer qualification criteria, procedure for making collections, and steps to be taken in case of customer delinquency. Pandey, (2004) submitted that credit is a marketing tool for expanding sales. Credit sales to customers however, must be well monitored because regardless of an organizations share of the market and demand for its products, if there are no measures put in place to regulate sales made to customers on credit, there could be problems especially those related to liquidity. However, Liquidity is cash, it is the ability of company to meet it financial obligations as when due. A company rich in fixed

assets may still be short of cash and therefore have difficulty in meeting current obligations. Liquidity is the ability of the firm to convert assets into cash. It is also called marketability or short-term solvency. The liquidity of a business firm is usually of particular interest to its short-term creditors since the liquidity of the firm measures its ability to pay those creditors. Several financial ratio measure the liquidity of the firm. Those ratios are the current ratios, the quick ratio or acid test, net working capital, and the interval measure or the burn rate. The objective of this study is to empirically examine the impact of credit management and liquidity position fo Nigerian banking sector on its profitability.

HYPOTHESES OF THE STUDY

There are two hypotheses about the relationship between credit management and firms' liquidity position. Thus,

Hypothesis 1:

The first is the alternative "risk absorption" hypothesis, which stipulates that efficient credit management enhances firms' ability to create liquidity. According to this hypothesis, liquidity creation exposes firm to risk and that the firms' higher sales will absorb these risks which would inturn expands banks' risk-bearing capacity.

$H_0 : b_0 = bi$ (Null hypothesis).

$H_1 : b_0 \neq$ (Alternative hypothesis).

If the null hypothesis (H_0) is accepted, it means credit management does not have a significant impact on firms' liquidity position.

Hypothesis 2:

The second hypothesis is the "financial fragility – crowding out" hypothesis. According to this hypothesis, in ability of firms' to maintain certain degree of liquidity reduces firms' profitability enhancement.

$H_0 : b_0 = bi$ (Null hypothesis).

$H_1 : b_0 \neq bi$ (Alternative hypothesis).

The null hypothesis (H_0) states that firms' liquidity position does not have significant impact on firms' profitability.

Model Specification

This section discusses the model specifications to examine the relationships between credit management and firms' liquidity position in Nigerian manufacturing companies. The data for this research is generated from the annual reports and accounts of the selected companies for a period of 10 years (2001-2010).

Pool linear regression was used in this research work. The data for the study collected will be analyzed using E-views (Econometric views) to test the relationship between the variable in the hypotheses and these variables are credit management, liquidity position and profitability. To achieve the objectives of this study, the data used include: Current Ratio, Debt Ratio, Gearing Ratio, and Cash Flow Ratio, Return on Asset, Working Capital, and Quick Ratio. The two empirical models used in this study is motivated by Berger and Bouwman (2009). The researcher adopts the model used by Shoaib (2007) and Onaolapo and Kajola (2010) with little modifications to suit the researcher's need.

Explanatory variables used in the estimations can be divided into two groups. The first contains credit management variables, while the second consists of variables describing firms' profitability. The most important explanatory variable here is the *current ratio* (*CR*), defined as the ratio of capital to total assets. This variable helps us uncover the relationship between credit management and firms' liquidity position. At the firms' profitability level, return on assets is the most important explanatory variable as it is used to capture the relationship between the firms' liquidity position and the firms' profitability. The model is as follows:

Model 1: Firms' Liquidity Position = f(Credit Management) (1)

CR = f(DR, GR, CFR) (2)

$CR_{it} = \alpha_0 + \beta_1 DR_{it} + \beta_2 GR_{it} + \beta_3 CFR_{it} + e_{it}$ (3)

Where:

CR = Current Ratio – this will be used in measuring the Firms' Liquidity Position

DR = Debt Ratio

GR = Gearing Ratio

CFR = Cash Flow Ratio

Debt Ratio, Gearing Ratio, and Cash Flow Ratio are used to measure the Credit Management

α = Constant

e_{it} = Error Term

β = Coefficients of Explanatory Variable

Model 2: Firms' Profitability = f(Firms' Liquidity Position) (4)

ROA = f(CR, WCR, QR) (5)

$ROA_{it} = \alpha_0 + \beta_1 CR_{it} + \beta_2 WCR_{it} + \beta_3 QR_{it} + e_{it}$ (6)

Where:

ROA = Return of Asset – this is used as a measure of Firms' Profitability

CR= Current Ratio

WCR = Working Capital Ratio

QR = Quick Ratio

Current Ratio, Working Capital, and Quick Ratio are all measures of Firms' Liquidity Position

α = Constant

e_{it} = Error Term

β = Coefficient of Explanatory Variable

Table 1: Showing Symbols, Variable and derivation of their Proxies

Symbols	**Variables**	**Proxies**
CR	Current Ratio	Current Asset/Current Liability
DR	Debit Ratio	Long Term Debt/Total Fixed Asset
GR	Gearing Ratio	Long Term Debt/Capital Employed
CFR	Cash Flow Ratio	PBIT/Long Term Debt
ROA	Return on Assets	Sales/Capital Employed
WCR	Working Capital Ratio	Current Asset/Current Liability
QR	Quick Ratio	Current Asset/(Current Liability+Long Term Debt)

β_1, β_2, and β_3 are coefficients of CR, DR, GR, CFR, ROA, WCR and QR, respectively

A'priori Theoretical Expectation

Here, we highlight the relationship between the dependent and explanatory variables.

It is clear that β_0 should be positive ($\beta>0$) as there can be no negative value for CR and ROA

$\beta_1< 0$; a positive change in CR will lead to a positive change in DR and GR

$\beta_2< 0$; a positive change in ROA, will lead to a negative change in CR and QR

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

This chapter mainly focuses on the data gathering, presentation without leaving out the interpretations. Regression analytic technique shall be adopted since the data to be used are completely secondary. However, this research is generated from the annual reports and accounts of the selected companies for a period of 10 years (2001-2010) to examine the relationships between credit management, liquidity position and firms' profitability in Nigerian manufacturing companies.

Pool linear regression was used in this research work. The data for the study collected will be analyzed using E-views (Econometric views) to test the relationship between the variable in the hypotheses and these variables are credit management, liquidity position and profitability. To achieve the objectives of this study, the data used include: Current Ratio, Return on Asset, Debt Ratio, Gearing Ratio, and Cash Flow Ratio, Current Ratio, Working Capital Ratio, and Quick Ratio.

Descriptive Statistics of Impact of Credit Management on Firms' Liquidity Position

The summary of the Descriptive statistics used in model of the research is presented in Table 4.1 below. As may be observed from the Table, Debt Ratio (DR) as a has the lowest mean value of 0.369689 and the mean value of Cash Flow Ratio (CFR) has the highest mean value of 26.14005 whereas the mean values of Current Ratio (CR) and Gearing Ratio (GR) are 1.148158 and 2.465868 respectively. The analysis was also fortified by the values of the skewness and kurtosis of all the variables involved in the models. The skewness is a measure of the symmetry of the histogram while the kurtosis is a measure of the tail shape of the histogram. The bench mark for symmetrical distribution i.e. for the skewness is how close the variable is to zero while the case of the kurtosis is three (mesokurtic) but values lower than that is called platykurtic and above is referred to as leptokurtic.

Table 2: Summary Descriptive Statistics of the variables used in Model 1

	CR	DR	GR	CFR
Mean	1.148158	0.369689	2.465868	26.14005
Median	1.213800	0.279250	0.313150	1.873450
Maximum	2.066300	1.393600	87.49130	462.1952
Minimum	0.388500	0.001200	-1.239200	-1.704400
Std. Dev.	0.405076	0.348961	13.79377	81.40929
Skewness	-0.212359	1.225854	6.077399	4.322049
Kurtosis	2.421951	4.055317	37.96676	22.35012
Observations	40	40	40	40

Source: Computed by the Researcher, 2013

Descriptive Statistics of Impact of Liquidity Position on Firms' Performance

The summary of the statistics used in this empirical study is presented in Table 4.2 below. As may be observed from the Table, Quick Ratio (DR) as a has the lowest mean value of 0.847480 and the mean value of Return on Asset (ROA) has the highest mean value of 17.64074 whereas the mean values of Current Ratio (CR) and Working Capital Ratio (WCR) are 1.148158 and 1.148160 respectively. The analysis was also fortified by the values of the skewness and kurtosis of all the variables involved in the models. The skewness is a measure of the symmetry of the histogram while the kurtosis is a measure of the tail shape of the histogram. The bench mark for symmetrical distribution i.e. for the skewness is how close the variable is to zero while the case of the kurtosis is three (mesokurtic) but values lower than that is called platykurtic and above is referred to as leptokurtic.

Table 3: Summary Descriptive Statistics of the variables used in Model 2

	ROA	CR	WCR	QR
Mean	17.64074	1.148158	1.148160	0.847480
Median	3.454350	1.213800	1.213800	0.837550
Maximum	572.5403	2.066300	2.066300	1.463400
Minimum	-8.065200	0.388500	0.388500	0.173400
Std. Dev.	90.02091	0.405076	0.405075	0.298515
Skewness	6.077591	-0.212359	-0.212368	-0.028467
Kurtosis	37.96854	2.421951	2.421959	2.667409
Observations	40	40	40	40

Source: Computed by the Researcher, 2013

Result of Unit Root Test

Time series properties of all variables used in estimation were examined in order to obtain reliable results. Thus, this exercise was carried out through Augmented Dickey Fuller (ADF) test as articulated by Engel and Granger (1987). This development arises from the prevalence of substantial co-movements among most economic time series data, which has been argued in the literature as undermining the policy implications that could be inferred from such modeling constructs (Engel and Granger, 1987). The ADF tests are used to determine the order of integration. That is, the number of times a variable has to be differenced before it becomes stationary.

Table 4 : Augmented-Dickey Fuller (ADF) Test

Variables/Coefficients	ADF Values	Mackinnon Critical Values	Order of Integration	Probability
CR	-6.334358*	-3.615588	I(1)	S
ROA	-7.158227*	-3.621023	I(1)	S
DR	-8.371046*	-3.615588	I(1)	S
GR	-7.128524*	-3.621023	I(1)	S
CFR	-6.334441*	-3.615588	I(1)	S
WCR	-5.361884*	-3.615588	I(1)	S
QR		-3.615588	I(1)	S

Source: Computed by the Researcher, 2013

Note: One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5% and10% respectively based on Mackinnon critical values. N and N.S. Means Significant and Not Significant respectively. At All Order Of Integration

The unit root test is conducted on the variables used in this study in other to avoid a spurious regression. From the table above, CR, ROA, DR, GR, CFR, WCR and QR are all stationary at first difference, and this can be seen by comparing the absolute critical value of the test statistics at 1%, 5% and 10% level of significance.

Model Estimation Result

Table 5 a: Ordinary Least Square Estimate for Model 1

Dependent variable: CR				
Method: Least squares				
Variable	Coefficient	Std. Error	t-statistics	Prob.
DR	0.677386	0.141743	4.778966	0.0000
GR	0.746126	0.003399	-2.196379	0.0012
CFR	-0.000855	0.000606	-1.411143	0.2168
C	0.938498	0.076158	12.32308	0.0000
R^2 = 0.970735 Adjusted R^2 = 0.964882 Durbin Watson: 2.160422				

Source: Computed by the Researcher, 2013

Table 5 b: Ordinary Least Square Estimate for Model 2

Dependent variable: ROA				
Method: Least squares				
Variable	Coefficient	Std. Error	t-statistics	Prob.
CR	34319.05	529181.4	0.064853	0.0001
WCR	-34373.59	529194.5	-0.064955	0.9486
QR	19.81766	94.41276	-0.209904	0.0000
C	97.13954	44.40765	2.187451	0.0003
R^2=0.922524 Adjusted R^2 = 0.914532 Durbin Watson: 2.290269				

Source: Computed by the Researcher, 2013

Regression Results and Discussion

Table 3 provides the results of the regression of the liquidity measures (CR). Hypothesis 1 predicts that a firm's credit management should have a positive impact on its liquidity position. The outcome of this research confirms this hypothesis and the relationship between CR and debt ratio which is used to measure credit management is positive and significant at 1% level. Thus, debt ratio is an important determinant of firm's liquidity position.

Table 3 provides the results of the regression of the performance measures (ROA). Hypothesis 2 predicts a positive relationship between liquidity position and firm's performance measure. The relationship between ROA and current ratio is positive and significant at 1% level. Thus, current ratio is an important determinant of firms' performance.

The result that credit management does not have a negative effect on the liquidity of manufacturing companies implies that a favourable credit policy would result in a favourable liquidity position; this is explained by the results of the analysis of the secondary data which shows that as the debtor's collection period falls, the cash conversion cycle also falls.

SUMMARY, CONLUSION & POLICY RECOMMENDATION

Summary

The main objective of this research work is to examine the impact of credit management, liquidity position on firms' profitability in some selected manufacturing companies in Nigeria. To analyze this research topic, To achieve the objectives of this study, the data used include: Current Ratio (CR), Return on Asset (ROA), Debt Ratio (DR), Gearing Ratio (GR), and Cash Flow Ratio (CFR), Working Capital Ratio (WCR), and Quick Ratio (QR). (CR), are the variables used to measure the impact credit management on firms' liquidity position as well as profitability. In achieving this objective, both descriptive and econometric technique has been employed with the use of time series data between 2001 and 2010. This study drew upon the Ordinary Least Square Method approach to estimate these relationships which was

found to be appropriate with the use of Augmented Dickey Fuller (ADF) to test for the stationary nature of the data.

Conclusions & Recommendation

Credit management is important part in firm financial management decision. The optimal of credit management could be achieved by firms that manage the trade-off between profitability and liquidity. The purpose of this study is to investigate the credit management-liquidity efficiency and liquidity-profitability relationship. Results of this research found that regression results are significantly positive associated to the firm profitability. The findings revealed that when a company's credit policy is favourable, liquidity is at a desirable level and lastly, the findings revealed that companies should ensure the monitoring and regular review of their credit policy and the allowance of cash discounts should be minimized as much as possible. This research therefore recommends that organization should consider their mission, the nature of their businesses and their business environment before setting up a credit policy and that the credit policy should not be disregarded after it is created.

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