

# **FIRM SIZE, AGE AND OPERATING CASH FLOW: EMPIRICAL STANDPOINT ON NIGERIAN BANKING SECTOR**

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## **ABSTRACT**

*The objective of this study is to ascertain the relationship between firm size, age and operating cash flow with much emphasis on the Nigerian banking industry. The study employed the panel least square (PLS) regression technique; while panel data for ten (10) banks, five (5) were generated from the Nigerian stock exchange. The result of our estimate reveals that Size, approximately has an insignificant positive impact on Operating Cash Flow, and that Age has an insignificant negative impact on Operating Cash Flow. Consequently, it was recommended that focus should be directed towards other firm characteristics in the determination of operating cash flows.*

## **INTRODUCTION**

### **Background to the study**

Cash flow from operations reflects the actual liquid position of any organization and explains the ability of a firm to meet its maturing short term obligation as they fall due. The fundamental concept of cash flows tends to eliminate any ambiguities as may be captured in the income statement which is used in the disclosures of either profit or loss as the case may be. This presupposes that at face value, the accounting construct called profit/loss might be deceptive, while cash is the ultimate reality. However, the cash flows from operations are the most important aspect of the tripods of the statement of cash flows because of the seemingly peculiar nature. The size and age of a firm may have a bearing on its ability to generate enough cash flows from the day to day activities of such organization. A firm's size usually is the total asset of such firm at a particular point in time while the concept of age could be interpreted differently depending on the situation or context where it is been used.

Jafari, Gord, and Beerhouse (2014) noted that cash flow sensitivity of investment is considered as one of the components of financial decisions. Because, the ability of the company's investment can affect in such a way the financing of company and as a result it is considered a kind of financial decision. They submitted that change in operating cash flow as a source of cash flow of companies has a significant impact on asset and capital structure, including cash flow holdings, investment and external financing. So that an increase in firms cash flow in the short term cause to increase savings and reduce external financing and

increases in long-term investment and external finance. Hertenstein and McKinnon (1997) opined that regardless of how the cash flow from operating activities section is formatted, it is important to remember that it is the most important of the three sections of the statement because it describes how cash is being generated or used by the primary activities of the company visa-a-vis its relationship with firm characteristics such as firm age, and size. Consequently, this study investigates the effect of these characteristics on operating cash flows.

### **Statement of research problem**

Several and related studies have been carried out in this area with focus on different sectors. Fagiolo and Luzzi (2004) investigated whether liquidity constraints affect firm size and growth dynamics using a large longitudinal sample of Italian manufacturing firms, and found out that pooled size distributions depart from log-normality and growth rates are well approximated by fat-tailed, tent-shaped (Laplace) densities. However, Adelegan (2009) investigated how the incidence and severity of information and agency problems vary across firms and over time in Nigeria, by assessing the differential effects on corporate investment. It was concluded that the effect of size is neutral, and that older firms tend to rely more on internal funds to finance their corporate investment than the newer firms, maintaining that the effect of financial factors on investment varies across firms according to their industrial characteristics. Meanwhile Jafari, Gord, and Beerhouse (2014) in their study examines the relationship between some variables (debt, firm size and liquidity), using 100 companies among the listed companies in Tehran Stock Exchange during the five-year returns, 2008 to 2012. Their result shows that there is an inverse relationship between debt and cash flow sensitivity, and that there is significant relationship between firm size and sensitivity and positive cash flow investment there.

The aforementioned studies did not lay much emphasis on the banking sector thus culminating in a gap in scope which this study wants to fill, hence in a bid to fill this gap and make meaningful contribution to knowledge; the study shall provide answers to the following questions:

1. What is the relationship between firm size and operating cash flow?
2. How does firm age affect operating cash flow?

### **Objectives of the study**

The general objective is to ascertain the relationship between firm characteristics and operating cash flows, while the following constitutes the specific objectives:

1. Determine the relationship between firm size and operating cash flow; and
2. Ascertain the effect of firm age on its operating cash flows.

### **Hypotheses**

The following hypotheses will be tested in this study

H<sub>01</sub> There is a negative relationship between firm size and operating cash flow

H<sub>02</sub> Firm age has no effect on operating cash flows

## LITERATURE REVIEW

### Introduction

This session will review relevant and related literatures on firm size, age and operating cash flow. It includes the conceptual framework, theoretical framework, and empirical review of related studies.

### Conceptual framework

#### *Firm size and age*

According to Heydari, Mirzaeifar and Javadghayedi (2014) different researchers used different indexes for measurement of firm size. Kroes and Manikas (2014) used sales logarithm, Abor (2008) used assets logarithm and Nakeur, Goaid, and Blanes (2006) used capital market value logarithm. Due to the inflammation dominated on Iran's economy and unrelated assets based on historical values, using sales for determining the size of companies is better.

#### *Operating Cash Flow*

Hertenstein and McKinnon (1997) opined that cash flow from operating activities shows the results of cash inflows and outflows related to the fundamental operations of the basic line or lines of business in which the company engages. The cash flow statement is one of the most useful financial statements companies prepare. When analyzed in a rational, logical manner, it can illuminate a treasure trove of clues as to how a company is balancing its receivables and payables, paying for its growth, and otherwise managing its flow of funds.

### Review of relevant and related empirical studies

#### *Firm Size and Operating Cash Flow*

Fagiolo and Luzzi (2004) investigated whether liquidity constraints affect firm size and growth dynamics using a large longitudinal sample of Italian manufacturing firms. They run standard panel-data Gibrat regressions, suitably expanded to take into account liquidity constraints (proxied by cash flow scaled by firm sales), and characterized the statistical properties of firms size, growth, age, and (scaled) cash flow distributions. However the pooled data show that: (i) liquidity constraints engender a negative, statistically significant, effect on growth once one controls for size; (ii) smaller firms grow more (and experience more volatile growth patterns) after controlling for liquidity constraints; (iii) the stronger liquidity constraints, the more size negatively affects firm growth. They found that pooled size distributions depart from log-normality and growth rates are well approximated by fat-tailed, tent-shaped (Laplace) densities. Adelegan (2009) investigated how the incidence and severity of information and agency problems vary across firms and over time in Nigeria, by assessing the differential effects on corporate investment. She adopted a reduced form q-cash flow model and interaction approach to examine the effects of firm size, age and industry specific characteristics on cash flow. Using panel data for Nigerian manufacturing firms from 1984-2000, it was concluded that the effect of size is neutral.

Jafari, Gord, and Beerhouse (2014) examines the relationship between some variables (debt, firm size and liquidity), using 100 companies among the listed companies in Tehran Stock Exchange during the five-year returns, 2008 to 2012. Their result shows that there is an

inverse relationship between debt and cash flow sensitivity, and that there is significant relationship between firm size and sensitivity and positive cash flow investment there.

### ***Age and Operating Cash Flow***

Adelegan (2009) submitted in her study that, older firms tend to rely more on internal funds to finance their corporate investment than the newer firms, maintaining that the effect of financial factors on investment varies across firms according to their industrial characteristics.

## **METHODOLOGY**

The analyses of data in this research was done with the panel least square (PLS) regression technique; while panel data for ten (10) banks, five (5) were generated from the Nigerian stock exchange.

### **Model Specification**

$OCF = F(\text{Size, Age})$

$$OCF_{it} = \alpha_0 + \alpha_1 \text{Size}_{it} + \alpha_2 \text{Age}_{it} + U_{it}$$

Where

$OCF_{it}$  = operating cash flow for firm  $i$  in year  $t$

$Size_{it}$  = size of firm  $i$  in year  $t$

$Age_{it}$  = Age of firm  $i$  in year  $t$

$U_{it}$  = stochastic error term

$\alpha_1, \alpha_2, \alpha_3$  = Regression coefficients

### **Data presentation, analyses and interpretation**

A total of ten (10) banks data for the period 2010-2014 were generated from relevant research data of the Nigeria stock exchange and used for analyses in this research.

## Results of the descriptive statistics

Table 1.1

	<b>OCF</b>	<b>SIZE</b>	<b>AGE</b>
<b>Mean</b>	<b>8578506.</b>	<b>4.79E+08</b>	<b>36.40000</b>
<b>Median</b>	<b>0.000000</b>	<b>21241394</b>	<b>26.00000</b>
<b>Maximum</b>	<b>2.14E+08</b>	<b>2.34E+09</b>	<b>69.00000</b>
<b>Minimum</b>	<b>-2.79E+08</b>	<b>0.000000</b>	<b>20.00000</b>
<b>Std. Dev.</b>	<b>69501029</b>	<b>7.04E+08</b>	<b>17.34523</b>
<b>Skewness</b>	<b>-0.342616</b>	<b>1.354817</b>	<b>0.744494</b>
<b>Kurtosis</b>	<b>9.674880</b>	<b>3.467567</b>	<b>1.907527</b>
<b>Jarque-Bera</b>	<b>93.79909</b>	<b>15.75153</b>	<b>7.105382</b>
<b>Probability</b>	<b>0.000000</b>	<b>0.000380</b>	<b>0.028647</b>
<b>Sum</b>	<b>4.29E+08</b>	<b>2.40E+10</b>	<b>1820.000</b>
<b>Sum Sq. Dev.</b>	<b>2.37E+17</b>	<b>2.43E+19</b>	<b>14742.00</b>
<b>Observations</b>	<b>50</b>	<b>50</b>	<b>50</b>

*Source: Researchers computation (2015) using Eviews 8.0*

The result of the descriptive statistics in Table 1.1 above shows the statistics of our data. It shows that OCF, which is the main variable of interest as it is the dependent variable has a mean value of 8578506, while its standard deviation is 69501029, it has a Jarque-Bera value of 93.79909. Size has a mean value of 4.79E+08 and a standard deviation of 7.04E+08, while Age has a mean value of 36.40000 and standard deviation of 17.34523. All the variables but OCF exhibited positive skewness.

## Results of the Correlation matrix

Table 1.2

Covariance Analysis: Ordinary

Date: 10/16/15 Time: 03:29

Sample: 2010 2014

Included observations: 50

Correlation	OCF	SIZE	AGE
OCF	1.000000		
SIZE	0.080809	1.000000	
AGE	-0.159804	-0.297502	1.000000

*Source: Researchers computation (2015) using Eviews 8.0*

Table 1.2 above shows the association among the variables employed in our study. It shows that OCF has a positive relationship with Size, and a negative relationship with Age with correlation coefficient values of 0.080809, and -0.159804 respectively. Similarly, Size has negative relationship with Age with correlation coefficient value of -0.297502.

## Test of hypotheses and discussion of findings

Table 1.3

Dependent Variable: OCF  
 Method: Panel Least Squares  
 Date: 10/16/15 Time: 03:29  
 Sample: 2010 2014  
 Periods included: 5  
 Cross-sections included: 10  
 Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	28575362	26934956	1.060902	0.2942
SIZE	0.003605	0.014887	0.242145	0.8097
AGE	-596817.0	603945.1	-0.988197	0.3281
R-squared	0.026752	Mean dependent var	8578506.	
Adjusted R-squared	-0.014663	S.D. dependent var	69501029	
S.E. of regression	70008728	Akaike info criterion	39.02426	
Sum squared resid	2.30E+17	Schwarz criterion	39.13898	
Log likelihood	-972.6066	Hannan-Quinn criter.	39.06795	
F-statistic	0.645944	Durbin-Watson stat	1.066496	
Prob(F-statistic)	0.528757			

**Source: Researchers computation (2015) using Eviews 8.0**

The regression result output table above shows the coefficient of determination ( $R^2$ ) value of 0.026752 which implies that only about 3% of the systematic variations in OCF is jointly explained by Size and Age while the balancing 97% is captured in the stochastic error term ( $u_t$ ). This means that the model, have a very weak predictive power. The F-statistic value of 0.645944 and its p-value of 0.528757 is an indication that on the average, the model is not statistically significant. Our findings shows that Size, approximately has an insignificant (0.242145) positive impact on OCF. However, Age has an insignificant (-0.988197) negative impact on OCF. The reason for the insignificance is because the variables failed the t-test. The Durbin-Watson value of 1.066496 on the average revealed the presence of serial correlation in the estimate.

Therefore, for the purpose of testing our hypotheses formulated in the introduction, it is obvious that Size, approximately has an insignificant (0.242145) positive impact on OCF. However, Age has an insignificant (-0.988197) negative impact on OCF. We therefore reject all null hypotheses in this study and accept the alternate hypotheses as follows:

There is a positive relationship between firm size and operating cash flow. This finding is inconsistent with that of Jafari, Gord, and Beerhouse (2014).

Firm age has a negative impact on operating cash flows.

## Conclusion and recommendations

The purpose of this study was to examine the relationship between firm size, age and operating cash flow with much emphasis on the Nigerian banking industry. The study reveals Size, approximately has an insignificant positive impact on Operating Cash Flow, and that Age has an insignificant negative impact on Operating Cash Flow. Consequently, it is therefore recommended that focus should be directed towards other firm characteristics in the determination of operating cash flows.

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## Appendix

### 1.0 Research data

S/ N	COMPANIES	YEAR S	NET OPERATING CASHFLOWS	SIZE	AG E
1	GTB	2010	194,070,874	1,152,411,526	20
		2011	153,950,053	1,611,879,579	21
		2012	9,239,076.00	1,734,877,860	22
		2013	74,754,003.00	2,102,846,415	23
		2014	-45,658,848	2,335,876,526	24
2	UNION BANK OF NIGERIA	2010	45,751	1,000,691	39
		2011	0	1,054,734	40
		2012	30,512	1,015,278	41
		2013	-106,537	1,002,756	42
		2014	-123,196	1,009,157	43
3	WEMA BANK	2010	0	203,144,627	65
		2011	0	222,238,550	66
		2012	14,124,619	244,426,281	67
		2013	14,012,504	330,872,475	68
		2014	-40,148,459	382,562,312	69
4	UBA	2010	0	1,599,185	61
		2011	0	1,920,435	62
		2012	0	2,272,923	63
		2013	-64,202	2,642,296	64
		2014	-107,616	2,762,573	65
5	FIDELITY BANK	2010	24,650	481,615	23
		2011	181,280	740,941	24
		2012	43,178	914,360	25
		2013	-37,679	1,081,217	26
		2014	53,565	1,187,025	27
6	ZENITH BANK	2010	188,227	1,895,027	20
		2011	-48,219	2,326,695	21
		2012	103,640	2,604,504	22
		2013	265,579	3,143,133	23
		2014	-115,933	3,755,264	24
7	DIAMOND BANK	2010	-23,544,183	542,098,490	20
		2011	74,418,396	714,063,959	21
		2012	29,526,618	1,178,103,754	22

		2013	213,865,738	1,518,856,431	23
		2014	131,865,738	1,933,123,375	24
8	STERLING BANK	2010	24,893,940	260,693,282	50
		2011	-11,288,204	504,048,213	51
		2012	-14,879,023	580,225,940	52
		2013	-41,953,972	707,797,181	53
		2014	-755,006	824,539,426	54
9	ACCESS BANK	2010	67,771,217	804,823,772	21
		2011	0	0	22
		2012	0	0	23
		2013	-117,276,193	1,835,466,000	24
		2014	-279,410,643	2,104,360,539	25
10	ECOBANK	2010	770,462	10,466,871	25
		2011	-178,441	17,161,912	26
		2012	195,379	19,950,335	27
		2013	-215,771	22,532,453	28
		2014	442,412	24,243,356	29

*Source: Author's compilation from the Nigeria stock exchange library (NSE), 2015*