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**RESEARCH ARTICLE**

**AN EMPIRICAL ANALYSIS OF PRE AND POST INITIAL PUBLIC OFFERING (IPO) PERFORMANCE** <sup>1,\*</sup>Harleytega Williams, <sup>2</sup>Joseph M. Okonkwo, <sup>3</sup>Irinymyi A. Benson and <sup>4</sup>Adetoso Adegoke

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**ABSTRACT**

This study investigates the impact of pre and post Initial Public Offering (IPO) Performance on selected firms. The data analysis ranges from 1 to 300 observations within a model specification framework on a Multivariate methodology. Two models were formulated to carry out the analysis on an Eview7 statistical package. The objective was to find out the position of the selected firms before and after IPO has been initiated and do a comparative analysis. From the analysis, Model two was seen as the best model to carry out a research of this nature because the independent variables such as age of company, total asset, ownership concentration, CEO stock holdings, average return on capital employed and the industry in which the company operates are regarded as the factors that influence IPO performance. The result shows that all the variables are positive showing a direct relation with IPO. The coefficient of determination shows 52.9% indicating that the model is good fit and the F-statistics of 54.8558 shows that all the variables in the model are statistically significant. However, the Durbin Watson statistics shows the presence of positive serial correlation. The study therefore recommends that firms should uphold the principles of good corporate governance and also ensure they disclose relevant information to the public in terms of CEO stockholdings in the company so as to build public confidence and to create and maintain good business image.

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**INTRODUCTION**

The third tail of the pecking order theory of capital structure correlate with initial public offering (IPO) for raising new finance for firms. Many CEO as seen IPO as a way of enriching themselves. This however, make the public to ask questions on why will a firm issued IPO with out any significant reasons. IPO being a platform to seek capital for expansion. Many finance researchers as shown that new ways of raising additional capital is through IPO. However, the preoccupation of this research is to show the position of some listed firms that issued Initial Public Offering for the first time. A unique way of conceptualizing the impact of initial public offer is to look at the variables that may affect initial public offering and other literatures.

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Moshirian, Ng, & Wu, (2010), carried out an investigation on Asian IPOs using a model specification. They conclude that performance is dependent on the type of research methodology. Goergen & Renneboog, (2007), cited by H. Kent Baker (2009), investigate IPOs and ownership. They concluded that there is no correlation between ownership retention and long run IPO performance. However, Roosenboom & Goot, (2005) conclude on their research paper that ownership and control variables manipulate market value at the time of the initial public offering. Durukan & Yrleskesi, (2002), carried out a research on the relationship between IPO returns and the factors influencing IPO performance. From their study, they mentioned that the firm size, gross earning, methodology applied on IPO analysis, age of firm and Debt/E ratio were statistically significant in the estimated short-term return regression equations. (Lowry & Shu, 2002), (Loughran & Ritter, 2004), (Bradley, Cooney, Jordan, & Singh, 2004) and (Ritter J., 1998) Cited by Gholamreza Zamanian et.al (2013) opined that the impact of variables such as issuer size, firm age, the number of shares sold by insiders at the offering and the



offer price are highly motivated in IPOs literature. They further provide evidence supporting that the size and P/E ratio are the main determinant of IPOs returns in long-run. They analyzed that most of the public companies and private enterprises are overpriced and the corporate ownership has no significant impact on returns of IPO in short-run and long-run. Therefore, the objective of this study is to critically analyze the pre and post financial period of some selected firms that issued IPO as a platform of raising new finance.

### Methodology

This is the process in which the research will be carried out. A pure quantitative analysis was applied in this research called the Multivariate analysis. In Multivariate analysis, the ultimate goal is estimation of the relationship between dependent and independent variables. In order to account for the impact of some variables on initial public offer, the model for the study is hereby specified as follows:

#### MODEL 1

$$ROCE = \beta_0 + \beta_1 AGE + \beta_2 SZ + \beta_3 OWN + \beta_4 FND + \beta_5 IND + \mu \dots \dots \dots \text{eq1}$$

#### MODEL 2

$$IPOR = \beta_0 + \beta_1 AGE + \beta_2 SZ + \beta_3 OWN + \beta_4 FND + \beta_5 ROCE + \beta_5 IND + \mu \dots \dots \dots \text{eq2}$$

Where:

IPOR= Initial Public Offer Rate of return

AGE= Age of company, (years).

SZ = Total assets,

OWN = Ownership concentration,

FND = CEO stockholdings above (40%): 1 if yes, 0 if no

ROCE= Average return on capital employed over the year prior to IPO

IND= Sector in which company operates (Ranking)

$\alpha_0$  = Intercept Parameter

$\mu$  = Stochastic Error Term

### Evaluation of Parametric Estimates in Multivariate Analysis

The parameters are evaluated based on two different criteria. One is the economic, a-priori criterion and the second is the econometric criterion.

#### A-priori/ Economic Criterion

This involves theoretical expectation drawn from economic principles and theories of growth. These will be used to determine the a-priori signs and magnitudes of the parameters. As regards the signs of the parameters, the following are expected.

### THE POSITION OF RBA BEFORE IPO WAS INITIATED INSERT MODEL ONE AND TABLE ONE HERE

$$ROCE = \beta_0 + \beta_1 AGE + \beta_2 SZ + \beta_3 OWN + \beta_4 FND + \beta_5 IND + \mu \dots \dots \dots \text{Model One}$$

### CHECK APPENDIX FOR TABLE ONE

Interpretation of Multivariate Regression Results of Table One and Model Specification One

#### Source of Regression Result: Eview7

In Table 1, the Multivariate regression result shows the original position of the firms before the initiation of the initial public offering. The age of company shows a negative coefficient of -0.219108, this is not statistical significant to return on capital hence, it shows a negative relationship. One percent increase on the age of company will on the average leads to about 0.219108 percent decrease on return on capital employed. This however, violates the apriori expectation state above that growth in the age of a firm will increase investor interest and thus boost return on capital employed. There also exists a significant negative relationship between total asset and capital employed. One percent fall in total asset will lead on the average, to about 0.000238 percent fall in return on capital employed.

The ownership concentration percentage share of pre-IPO is not statistical significant and has no significant relationship with return on capital employed. One percent fall on ownership concentration percentage share of pre-IPO will leads to about -0.121173. There exist a positive relationship between the CEO (FND) has founder of the company and return on capital employed of about 12.57003. One percent rise in ratio of CEO has founder of the company of 12.57003 to return on capital employed will lead to a corresponding rise of about 12.57003 on return on capital employed. However, the sector in which the company operates also has an impact on the return on capital employed. The sector in which the company operates shows a negative coefficient of -1.116680. This however, may not encourage investment on that sector and thus may call for diversification of investment.

In the result, the coefficient of determination is low compare with that of model one. The coefficient of determination shows that about 6.64 percent of the total variations on capital employed are explained by all the independent variables in the model. The adjusted  $R^2$  also indicates that about 5.1 percent of the total variations in ROCE are explained by the model. This does not represent a good fit. The F-statistic of 4.183772 is not statistically significant at 5 percent critical level. However the Durbin Watson statistical value of 1.985395 indicates the presence of positive serial autocorrelation.

### INSERT TABLE 2 FROM APPENDIX USING MODEL 2 MODEL 2

$$IPOR = \beta_0 + \beta_1 AGE + \beta_2 SZ + \beta_3 OWN + \beta_4 FND + \beta_5 ROCE + \beta_6 IND + \mu \dots \dots \dots \text{Model Two}$$

Source of Regression Result: Eview7

In table 2, Multivariate regression result, we use initial public offering rate of return as the dependent variable and incorporate return on capital employed and other variables that may cause changes on dependent variable to measure the



performance of initial public performance rate of return and carryout a comparative analysis. From the model 2 and table 2, age of the firms (AGE) shows a positive coefficient of 0.22789, this is statistical significant to initial public offering rate of return. One percent increase on the age of company will on the average leads to about 0.22789 percent increase on initial public offering rate of return. This means that has the company grows, there will be a positive growth rate on initial public offering rate of return. This however, conforms to the apriori expectation stated above. There exists a significant positive relationship between total asset(SZ) and initial public offering rate of return. One percent increase in total asset will lead on the average, to about 0.000387 percent increase in initial public offering rate of return. The ownership concentration percentage share of pre-IPO (OWN) is statistical significant and has a significant relationship with initial public offering rate of return with a positive coefficient of 0.263158. One percent rise on ownership concentration percentage share of pre-IPO will leads to about 0.263158 percent increase on initial public offering rate of return.

Also from the regression results in table 2, there exist a positive relationship between the CEO (FND) has founder of the company and initial public offering rate of return of about 16.0508. One percent rise in ratio of CEO has founder of the company of 16.0508 to initial public offering rate of return will lead to a corresponding rise of about 16.0508 respectively. However, the sector in which the company operates (IND) also has an impact on initial public offer. The sector in which the company operates shows a positive coefficient of 0.809726. This however, may encourage investment and thus increases the rate of initial public offer. Also the return on capital employed shows a positive relationship with initial public offer of 0.681477.

In the result, the coefficient of determination is very high compare to any other model in the study. The coefficient of determination shows that about 52.9 percent of the total variations on initial public offering rate of return are explained by all the independent variables in the model. The adjusted  $R^2$  also indicates that 51.9 percent of the total variations in initial public offering rate of return (IPOR) are explained by the model. The F-statistic of 54.8338 is significant at 5 percent critical level. It indicates that the joint variations of the model are statistical significant. However the Durbin Watson value of 1.87 indicates a presence of positive serial autocorrelation.

## RESULTS

- From our findings, model one show that there is no statistical significant relationship between return on capital employed and the independents variables such as age of the company, total asset, ownership concentration and the sector in which the company operates. The positive variable in model one is the CEO holding a significant portion of stock (FND). Therefore, the CEO plays significant impacts on the return to capital employed. We also found out that the coefficient of determination is very low of 6.64% and thus does not represent a good fit.

- We generate a second model and replaced return on capital employed with initial public offering rate of return and incorporate return on capital employed into the model as an independent variable and regress against initial public offering rate of return and found out that all the independent variables has a positive relationship. We also realized that IPOR is the best dependent variable to use in a research of this nature.
- From our findings, using the coefficient of determination as a judgmental factor from all the models specified above; we found out that model two is the best model for this research. This is because the coefficient of determination is 52.9% representing a good fit compare to model one. Since the  $R^2$  indicates that about 52.9percent of the total variations in IPOR are explained by the variations in all the explanatory variables used in our model, we therefore accept that age, total asset, ownership concentration, CEO has founder, average return on capital employed and the sector in which the industry operates are the most determining factor that can influence IPO performance.
- Also form our analysis and findings, we realized that the most robust predictor of IPO performance is the CEO holding a large portion of its firm stock with the highest regression coefficient. From our findings, it shows that the managers do not have any attempt to dilute their ownership in an attempt to mitigate the effect of foreseen problems.
- We also found out that Age, SZ, OWN, FND, ROCE and IND variables are statistical significant with F-statistics of 54.8558 shown in table 2. This however, conforms to other research done by scholars around the globe.

## DISCUSSION

Firms issuing out IPO should disclose relevant information to the public in terms of their shares holding in the company. This will be build public confidence and also create good image in the eyes of the public on the company. Good corporate governance committed to democratic principles, organization culture and policy will enhance the quality of the IPO. The public should have a tangible knowledge of the company they seek to invest on in the absence of brokers and how long the company has been in business. Also that ownership structure, CEO participation and total assets of the company are important information that the public are interest on when IPO issues are involved. There is need for management to give discount on shares purchase by staff during IPO sales to supplement for significant portion of stock held by CEO. This will stand as a motivating factor to staff to work as a team and uphold the value, culture and policy of the organization.

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## APPENDIX

Table I

Dependent Variable: ROCE  
Method: Least Squares  
Date: 04/20/16 Time: 05:28  
Sample: 1 300  
Included observations: 300

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41.39274	10.55938	3.919996	0.0001
AGE	-0.219108	0.528607	-0.414501	0.6788
SZ	-0.000238	0.000146	-1.631204	0.1039
OWN	-0.121173	0.086076	-1.407734	0.1603
FND	12.57003	3.069146	4.095613	0.0001
IND	-1.116680	0.962716	-1.159927	0.2470
R-squared	0.066426	Mean dependent var		35.48333
Adjusted R-squared	0.050549	S.D. dependent var		24.62474
S.E. of regression	23.99429	Akaike info criterion		9.213306
Sum squared resid	169263.4	Schwarz criterion		9.287382
Log likelihood	-1375.996	F-statistic		4.183772
Durbin-Watson stat	1.985395	Prob(F-statistic)		0.001093

Source: Eview7

Table 2.

Dependent Variable: IPOR  
Method: Least Squares  
Date: 04/21/16 Time: 05:37  
Sample: 1 300  
Included observations: 300

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.984532	8.734635	0.456176	0.6486
AGE	0.227890	0.426386	0.534468	0.5934
SZ	0.000387	0.000118	3.279280	0.0012
OWN	0.263158	0.069644	3.778599	0.0002
FND	16.05080	2.544542	6.307935	0.0000
ROCE	0.681477	0.047029	14.49045	0.0000
IND	0.809726	0.778096	1.040651	0.2989
R-squared	0.529041	Mean dependent var		60.24107
Adjusted R-squared	0.519397	S.D. dependent var		27.90987
S.E. of regression	19.34867	Akaike info criterion		8.786182
Sum squared resid	109690.7	Schwarz criterion		8.872603
Log likelihood	-1310.927	F-statistic		54.85580
Durbin-Watson stat	1.875762	Prob(F-statistic)		0.000000

Source: Eview7

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