

Studies on the Organocapital Structures; Profitability and External Financing on Nigerian Manufacturing Firms (1990-2012)

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Received: 8 December 2016 Accepted: 3 January 2017 Published: 15 January 2017

Abstract

The firm's capital structure decisions, affect profitability of the firms and external financing affects the composition of financing mixture. Using data from the published financial statements and accounts of quoted firms for the period 1999-2012, obtained from Nigerian Stock Exchange. The impact of external financing on return of equity and earnings per share on manufacturing firms in Nigeria were examined. The result of analysis indicates that the use of external financing have negative and non significant impact on return on equity. Also, on earning per share, it had negative and non significant. This indicate that the use of external financing does not impact positively on the earning per share of Nigerian manufacturing firm. The implication of these decreases on earning per share and return on equity is that wealth is not created. Wealth creations means improvement in the standard of livings on shareholders and will eventually translates to the development of the economy.

Index terms— capital structure, external financing and manufacturing firms.

1 Introduction

Capital structure means various financing options available to firms to finance the activities of the firms. These financing options can be classified as either external or internal financing. The components of these sources of finance are equity, debt and or other financial facilities (Raheman et al 2007). Most firms attempt to have different levels of the mixtures of equity and debt in order to minimize cost and increase profits, so that the shareholders' value will be increased (Raheman et al). Leary and Roberts 2005 states that firms strive to maintain an optimal structure that balances the costs and benefits associated with varying degrees of financial leverage. Therefore, it is this methods or financing options available to firms that have given rise to various capital structure theories. These capital structure theories try to explain various relationships that exist between leverage and profitability. The optimal mix between equity and debts and determinants of corporate financed structure.

The earliest of such theories is modified Miller and Modigliani theory of capital structure irrelevance, (1958) which states that financing doesn't matter in perfect capital markets. According to the theorem, given the assumption that 'firms and investors have the same financial opportunities, under conditions of perfectly competitive financial markets, no asymmetries of information between different agent and the same tax treatment of different forms of finance, the corporate financial policy is irrelevant.

Myers 2002 in analyzing MM theory, states that if market value of the firm's debt and equity add up to total firms value, then if firm value is constant, any mixture of debt and equity could be used, provided the assets and growth opportunities are held constant. That is that the proportion of debt or equity result is irrelevant. Myers went on to ask "are capital markets really sufficiently perfect?" Many studies had thrown more light on this issue.

Fabozzi et al (2012), states that under perfect capital market, capital structure decision is irrelevant and there is no optimal capital structure. And further stated that when perfect capital market assumptions are relaxed, then the capital structure matters. These conditions of capital markets are asymmetric information, tax advantage of

debts, principal agent relation and transactions costs. There are various theories emanating from these conditions, such as Asymmetric Information theories, Agency theory, Pecking Order theory, and Trade-off theory etc. These theories consider various effects of corporate taxation on leverage, capital structure and financial distress and also their effects on profitability. ??kafor (1983) identify that financial system consists of financial intermediaries, financial markets, financial rules, conventions and norms that help in the flow of funds in the economy. These enhance economic performance through facilitating allocation of capital and risk, thereby providing job creation, raising productivity growth rate with lower unemployment rate. Siglitz (2000) had identified that there is need for intervention in short term capital flows in the argument of capital market liberalization and instability. The issues are that capital structure, external financing affect the profitability of firms.

Prasad et al (2001) stated that there were three ways in which firm could fund new investments, through three main choices; use retained earnings, debt instruments or equity shares issues. The essence of these new investments is to generate income. Some studies have identified some differences between the components of capital structures of firms in developed and developing countries. In the developing economics, firm's capital mix is mainly equity and shortterm debt. Yartey, (2008), or Abor (2008) in the study of Ghanaian firms, the Nigerian firms capital structure analysis, evidence from stock exchange fact book, show that their capital is mainly equity and shortterm debts from Treasury bills.

The Khan (2010), in the exploration of the relationship of capital structure decision with the performance of the firms in the developing market economics like Pakistan found out that the relationship between financial leverage and firm performance measured by the return on assets has a significant and negative relationship with firm performance. Asset size had insignificant relationship with the firm performance measured by ROA (Return on Assets). Firms in the engineering sector of Pakistan were largely dependent on short term debts, these debts were attached with strong covenants which affected the performance of the firms.

Saeedi and Mahmoodi (2010) investigated the determinants of capital structure of Iranian firms listed in Tehran stock exchange, the results indicated that leverage decreased with profitability, liquidity and tangibility while also increase with business risk.

The theoretical and empirical literature surveyed above shows the extent of the impact of external financing on performance of firms. While some studies reveal that external financing have positive impact on firm performance, others reveal that its impact on firm performance is negative and non-significant.

The opinion and findings from the above show that there is no consensus reached on the impact of external financing on firm performance. This lack of consensus could be attributed to so many reasons. This includes the perception of investors on external financing in developing economies where investors view the use of external financing as a symptom of poor performance of firms. Also, the inability of cost firms to access funds from financial institution also inhibited firms ability to raise funds from external sources thereby limiting growth potentials.

Thus, taking cognizance of this lack of consensus and seeking to overcome some of the short comings as well as limitations noticed in the studies reviewed with particular emphasis on Abor (2008), this study fills this important gap by modifying Abor (2008) through introduction of a panel data set in determining the capital structure, external financing and profitability on performance of manufacturing firms in Nigeria and also including control variables such as firm size and assets structure in line with the works of Abor (2008) for the period 1999 to 2012.

2 II.

3 Model Specification

The data was obtained from the published financial statement accounts of quoted manufacturing firms for the period 1999-2012. The study adopted Abor (2008) study to examine the impact of external finance on stock return of Nigerian firms. According to Abor (2008) panel data can control for individual heterogeneity due to hidden factors, which, if neglected in time-series or cross-section estimation leads to biased results, ??Badtagi, 1995). The panel regression equation differs from a regular time series or cross-section regression by the double subscript attached to each variable. Therefore, the general form of the model for this study is specified as $Y_{it} = a + \beta_1 X_{it} + \mu_{it}$ ———(i)

The subscript i denotes the cross-sectional dimension and t representing the time series dimension. The left-hand variable Y_{it} , representing the dependent variable in the model, which is the firm debt ratio. X_{it} contains the set of explanatory variables in the estimation model, a is the constant and B represents the coefficient while u represents the error term.

However, in line with the hypothesis stated in the study, the model was specified as follows. For hypothesis one which stated that External Financing do not have positive and significant impact on earnings per share of Nigerian manufacturing firms. ??1962) suggest that some model proxies agreed that they have impact on firm performance. For instance, Asif, Rasool and Kamel (2011) were of the opinion that dividend policy vaguely followed by firms has negative impact on dividend payment by high-debt firms. Khan (2010) shows that financial leverage measured by short-term debt to total assets, and total debt to total assets has a significant and negative relationship with firm performance measured by return on assets.

4 FS = Firm size

5 Techniques of Analysis

The hypotheses stated were tested using the ordinary least square model. The signs and significance of the regression coefficients was relied upon in explaining the nature and influence of the independent and dependent variables as to determine both magnitude and direction of impact. Regression analysis is often concerned with the study of the dependence of one variable, the dependent variable on one or more other variables, the explanatory variables with a view to estimation and I or predicting the population mean or average value of the former in terms of known or fixed (in repeated sampling) values of the letter ??Gujarati and Porter, 2009).

Most commonly, repression analysis estimates the conditional expectation of the dependent variable given the independent variables that is the average value of the dependent variable when the independent variables are held fixed. Less commonly, the focus is on quartile or other location parameter of the conditional distribution of the dependent variable given the independent variables. In all cases, the estimation target is a function of the independent variables called the regression function. In regression analysis, it is also of interest to characterize the variation of the dependent variable around the regression function which can be described by a probability. (Gujaratit,1995).

6 III.

Presentation and Analysis of Data Objective One; To examine the impact of external financing on the earnings per share of the quoted manufacturing firms in Nigeria Table 4.1 and 4.2 present the abridged data and descriptive statistics for the period 1999 to 2012. As revealed from the tables, it showed that the mean of the external finance of quoted Nigerian manufacturing firm was 0.8425 while the median was 0.1600. As revealed by the skewness, there was a positive skewness (10.37) of external finance indicating that the degree of departure from the mean of the distribution is positive revealing that overall there was a consistent increase in external finance from 1999 to 2012. Though as indicated by the Kurtosis which was $115.37 > 3$ which is the normal value indicated that the degree of peakedness within the period of this study were not normally distributed as most of the value did not hover around the mean. The Jarque-Bera statistic is an indication of the normality of distributions was 146918 and since the probability was equal to zero, the distribution was not normally distributed.

From the table also, the average earning per share are 6.378 while the median was 1.685. The maximum earnings per share were N70.00 while the least was N0.01k. The standard deviation was 13.086. As revealed by the skewness, there was a positive skewness (3.149) of earnings per share indicating that the degree of departure from the mean of the distribution is positive revealing that overall there was a consistent increase in earning per share from 1999 to 2012. As indicated by the Kurtosis which was $12.732 > 3$ which is the normal value indicates that the degree of peakedness within the period of this study was not normally distributed as most of the values did not hover around the mean. The Jarque-Bera statistic is an indication of the normality of distributions was 1511.95 and since the probability was equal to zero, the distributions was not normally distributed.

Objective two: To examine the impact of external financing the return on equity of the quoted manufacturing firms in Nigeria. As revealed from the tables, it showed that the mean of the external finance of quoted Nigeria manufacturing firms was 0.8425 while the median was 0.1600.,there was a positive skewness (10.37) of external indicating .that overall there was a consistent increase in external finance from 1999 to 2012.though as indicated by the Kurtosis which was $11.37 > 3$ which is the normal value indicates that the degree of peakedness within the period of this study was not normally distributed as most of the value did not around the mean. the Jarque-Bera statistic is an indication of the normality of distribution was 146918 and since the probability was equal to zero,the distribution was not normally distributed.

From the table also the average return on equity is 0.415 while the median was 0.260. maximum return on equity was 21.03 while the minimum was -9.42 with a standard deviation of 1.75. As revealed by the skewness,there was a positive skewness of 5.96 indicating that the degree of departure from the mean of the distribution is positive revealing that overall there was a consistent increase in return on equity from 1999 to 2012. As indicate by the Kurtosis which was $78.70 > 3$ which is the normal value indicates that the degree of peakedness within the period of this study was not normality of distributions was 66069.76 and since the probability was equal to zero the distribution was not normally distributed. H a : External financing has positive and significant impact on earnings per share of quoted Nigerian Manufacturing Firms.

V.

7 Comparism of Random and Fixed Effect

$(3) = (b-B)'[(V_b - V_B)^{-1}] (b-B) = 2.98 \text{ Prob} > \chi^2 = 0.3941$

From the above, the null hypothensis is rejected since p-value > 0.05 , hence, the random effect regression model was used to test hypothesis one. As revealed from table 4.4, the impact of the external financing on earnings per share of quoted Nigerian manufacturing firms is negative and nonsignificant ($a = -0.01$, $z = -0.21$, p-value $0.833 > 0.05$). This indicates that the use of external financing does not impact positively on the earning per share of Nigerian manufacturing firms. Overall, the coefficient of determination as revealed by R-square (R^2) in between the firm was 12.8%. This indicates that the 12.8% of variation observed in the dependent

variable earnings per share was explained by variation in the independent variable external financing and the control variables (Asset structure and size). This is understandable given the level of observation in the panel. The Wald chi 2 which was $2.51 > 0.05$ indicates that the F-test result of all the coefficient in the model are not different than zero. The random effect result which was equal to zero reveals that the differences across units are uncorrelated with the regressors. For the control variables, the results indicates that asset structure of quoted manufacturing firms in Nigeria also had negative and non-significant ($a = -3.21$, $z = -1.56$, $p\text{-value } 0.118 > 0.05$) impact on earnings per share while size of the firm had positive though non-significant ($a = 1.58$, $z = 0.91$, $p\text{-value } 0.365 > 0.05$) impact on earnings per share Test of Hypothesis Two H_0 5 :

8 VI.

9 Analysis of Regression Result of Hypothesis One

External Financing does not have positive and significant impact on return on equity of quoted Nigerian manufacturing firms.

Ha 5 :

External Financing has positive and significant impact on return on equity of quoted Nigerian manufacturing firms.

10 VII.

Comparism of Random and Fixed Effect (3) = $(b-B)'[(V_b - V_B)^{-1}] (b-B) = 2.98$ Prob>chi2 = 0.3941

From above, the null hypothesis is rejected since $p\text{-value} > 0.05$, hence, the random effect regression model was used to test hypothesis five. As revealed from the table 4.12, the impact of the external financing on return on equity of quoted Nigerian manufacturing firms is negative and nonsignificant ($a = -0.002$, $z = -1.11$, $p\text{-value } 0.266 > 0.05$). This indicates that the use of external financing has negative and non-significant on the return on equity of Nigerian manufacturing firms. Overall, the coefficient of determination as revealed by R-square (R^2) in between the firms was 20.67%. This indicates that 20.67% of variations observed in the dependent variable return on equity were explained by variations in the independent variable external financing and the control variables (asset structure and size). This is understandable given the level of observations in the panel data set. The Wald Chi 2 which was $12.88 > 0.05$ indicates that the F-test result of a the coefficient in the model is not different than zero. The random effect result which was less than zero reveals that the differences across units are uncorrelated with the regressors. For the control variable, the results indicates that asset structure of quoted manufacturing firms in Nigeria also had negative and significant ($a = -34.3$, $t = -3.41$, $p\text{-value } 0.001 < 0.05$) impact on the return on equity while size of the firm had positive though positive and significant ($a = 0.26$, $t = 3.09$, $p\text{-value } 0.002 < 0.05$) impact on return on equity.

11 Analysis of Regression Result of Hypothesis Two

12 VIII.

13 Conclusion

The preoccupation of the paper has been to investigate impact of Capital Structure, External Financing on the profitability of Nigerian manufacturing firms. This had been investigated through two perceptsives:

1. The Impact of External Financing on return on equity and, 2. On earning per share.

These are two relationship of profitability indices.

The data analysed in this study not only show that return on Equity is negatively related to external financing and that external financing does not magnified earnings attributed to shares both in terms of book value measures or returns attributed to them

The finding in this paper contribute to the fact that shareholders of Nigeria firms do not get back some returns on their investments as revealed by result of the analysis that the impact of external financing had negative and non-significant impact on return on equity and earning per share. The implication as stated above is that wealth is not created. This has conform to earlier studies in Nigeria by various scholars, that Nigeria thrives only in one sector of oil economy. Other studies, had called for development of the Capital Goods Sector of Nigeria's manufacturing industry, which they stated that the absence will affect the transformation of its own saving to investment.

The analysis in this paper also found that assets of the firms are positively related to external financings. The implication is that as external financing is increasing, the assets also increased, but this increase does not reflect on the profitability of the firms. One reason may be elluded to the fact that these assets are purchased outside the country with its exhotbitant cost and by implication the cost of production becomes high and profitability is produced minimally.

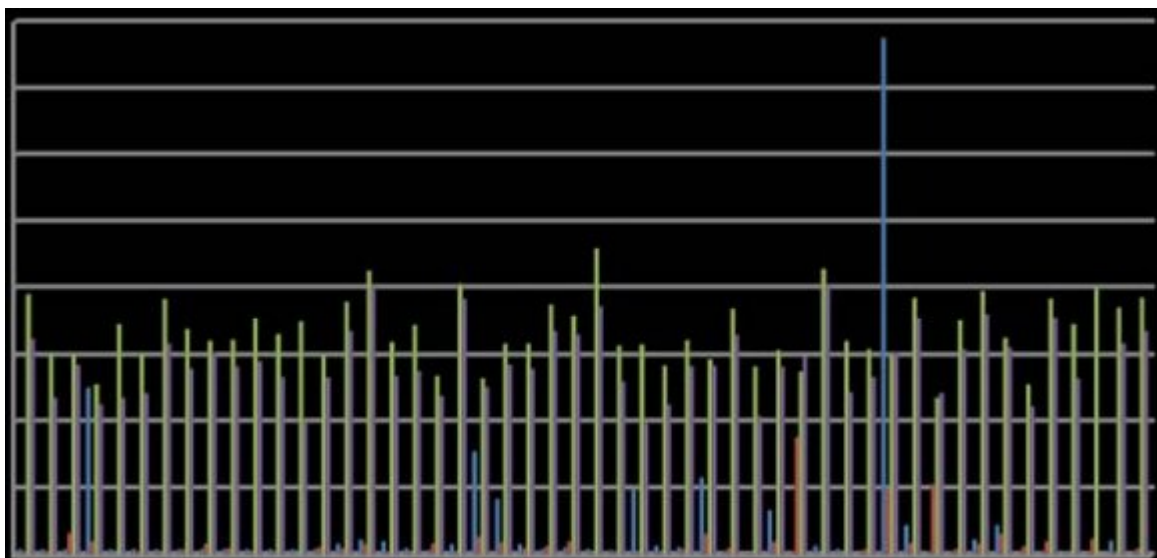


Figure 1:

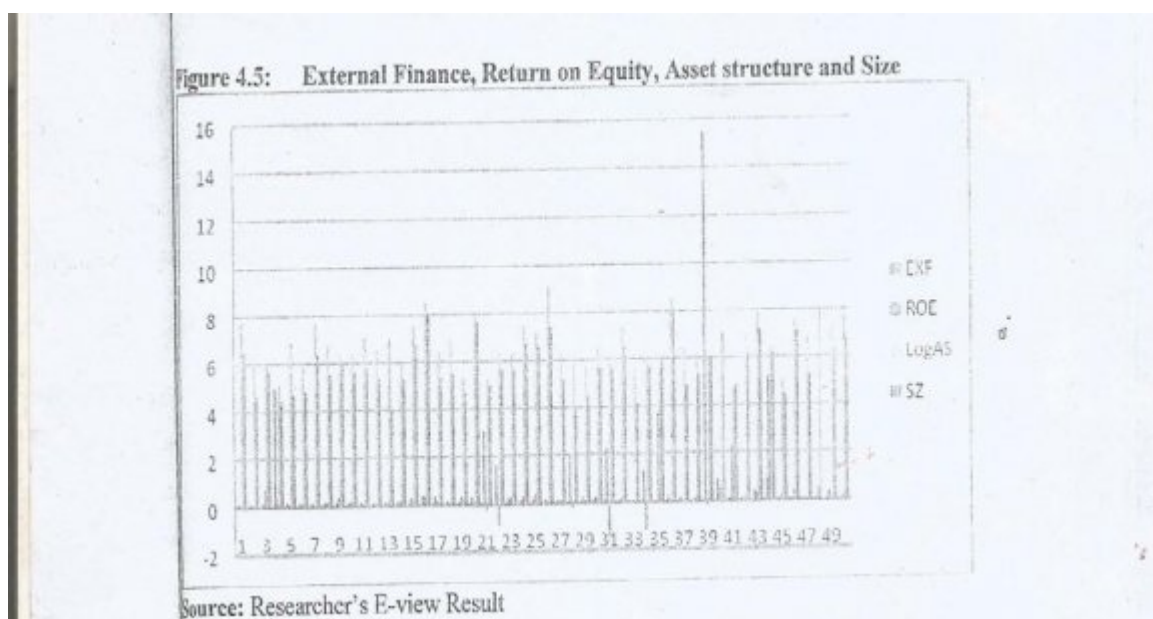


Figure 2:

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1: Model Proxies

Figure 3: Table 4 .

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Figure 4: Table 4 .

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Figure 5: Table 4 .

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3: Hausman Test Result Hypothesis one				
	Coefficients			
	(b)	(B)	(b-B)	$\sqrt{\text{diag}(V_b - V_B)}$
	fixed	Random	Difference	S.E
EXF	-	-.010167	.0058061	.0089396
	.0043609			
LogAS	-	-3.206971	.9333993	.5480008
	2.273572			
SZ	1.557088	581759	-	.2830469
			.0246711	
			Source:	
			re-	
			searcher's	
			Stata	
			result	

b = consistent under H_0 and H_a ; obtained from xtreg

B = inconsistent under H_a , efficient under H_0 ; obtained from xtreg

Test: H_0 : difference in coefficients not systematic
chi2

Figure 6: Table 4 .

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Random-effects GLS regression				Number of obs	=	603
Group variable: YEAR				Number of groups	=	19
R-sq: within	=	0.0019		Obs per group: min	=	1
between	=	0.1289		avg	=	31.7
overall	=	0.0042		max	=	51
corr(u_i, x)	=	0 (assumed)		Wald chi2(3)	=	2.51
				Prob > chi2	=	0.4737
EPS	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
EXF	-	.0481042	-	0.833	-	.0841155
		.010167	0.21			.1044495
LogAS	-	2.052298	-	0.118	-	.8154581
		3.206971	1.56			7.229401
SZ	1.5817591	7.46439	0.91	0.365	-	5.004717
						1.841198
_cons	20.431529	4.21277	2.17	0.030	1.966158	38.89688
sigma_u	0					
sigma_e	35.97919					
Rho	0					
				(fraction of variance due to u_i)		
				Source: Researcher's Stata Result		

Figure 7: Table 4 .

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Figure 8: Table 4 .

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5: Hausman test result of Hypothesis two			
Coefficients			
(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
fixed	Random	difference	S.E
EXF-	-.0026206	.0002633	.0004296
.0023573			
LogAS	-.3427512	-	.0265813
.3544257		.0116745	
SZ	.2637706	-	.0135227
.2586032		.0051674	
Source: researcher's Stata result			
b = consistent under Ho and Ha; obtained from xtreg			
B = inconsistent under Ha, efficient under Ho; obtained from xtreg			
Test: Ho: difference in coefficients not systematic			
chi2			

Figure 9: Table 4 .

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Figure 10: Table 4 . 6 :

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6: Regression Result of Hypothesis Two					
Random-effects GLS regression			Number of obs	=	603
Group variable: YEAR			Number of groups	=	19
R-sq: within	= 0.0212		Obs per group: min	=	1
between	= 0.2066		avg	=	31.7
overall	= 0.0211		max	=	51
corr(u_i, x)	=	0	Wald chi2(3)	=	12.88
	(assumed)				
			Prob > chi2	=	0.0049
EPS	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
EXF	-	.002355	-	0.266	- .0019951
		.0026202	1.11		.0072364
LogAS	-	.100474	-	0.001	- -
		.3427512	3.41		.5396767 .1458257
SZ		.2637706.0855002	3.09	0.002	- .4313478
					.0961934
_cons	1.115163.461236		2.42	0.016	.2111565 2.019169
sigma_u	0				
sigma_e	1.7603527				
Rho	0				
				(fraction of variance due to u_i)	
				Source: Researchers Stata Result	

Figure 11: Table 4 .

216 In view of finding of this research,management must match the financing mix to the assets financed as closedly
217 as possible in term of both timing and cash flows as to achieve the overall objective of the firm,because value
218 enhanced firm implies happy stakeholders thereby enhancing earnings attributable to shareholders. ^{1 2 3}

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²()2017GStudies on the Organocapital Structures; Profitability and External Financing on Nigerian ManufacturingFirms (1990Firms (-2012))

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