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TESTING THE VALIDITY OF OPTIMAL CAPITAL STRUCTURE THEORY IN NIGERIAN LISTED OIL FIRMS

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Abstract

This study seeks to investigate the determinants of capital structure in Nigerian oil industry in a bid to test the validity or otherwise of the Optimal Capital Structure theory's arguments. six of the ten listed firms whose reports were regularly published over the period 2005-2012 were selected for the study. They are Oando, Mobil, Total, Mrsoil, Conoil and Eternal. Pooled OLS, Fixed and Random Effect Model were employed for analytical purpose while T-test, F-test and Durbin Watson test were carried out for reliability. From the findings of this study, it was shown that the profitability, age, size but tangibility are significant in determining the capital structure of Nigerian oil firms. The study provides a confirmation of Static Trade-off Theory which holds that highly profitable firms uses more debt because there is a little risk of bankruptcy and the tax shield is substantial. The findings however contradict the assertion that big companies with more tangible assets would use more debt because blue chip companies are able to issue even naked promissory notes or commercial papers as subscribers rely on their financial strength (profitability) and stability (age). Moreover the size denoted by sales does not connote profitability, hence the need for firms in this industry to cut operating or overhead expenses.

Keywords: capital structure, trade-off, debt, equity, tangibility

INTRODUCTION

Modern businesses require huge amount of assets for effective operation. Some of these investments are tangible such as land, building, machineries and equipments while others intangible such as technical expertise, trademark and patents all of which must be paid for, nature of the asset notwithstanding (Oloyede, 2000). The onus then lies on the financial manager to determine the appropriate financing mix that maximizes the value of the firm on one hand and minimizes the cost of capital on the other hand and ultimately maximizes the wealth of the shareholders. Capital structure decision is an important area of corporate finance such that a mismatch of financing choices could land a firm in grave. To this extent, a number of theories have been advanced to guide and explain the rationale behind financing choices of firms. Notable among them are the Modigliani and Miller miller theories, agency theories, static trade off theory and pecking order theory.

A plethora of empirical investigations have been undertaken on what determines the capital structure of manufacturing industry in Nigeria. Other studies on the subject focused on Nigerian Banking Industry (see Vahid, 2013). Extensive review of literature equally revealed the existence of a number of quantitative analyses on the determinants of capital structure of the oil industry in different countries of the world. (see Sabir & Ali Malik, 2012 and Saleem, Rafique, Mehmood, Irfan, Saleem, Tariq& Akram, 2013). The significance of oil and gas industry in Nigeria can be explained by the role of Petroleum resources as a major revenue earner owing to the collapse of agricultural cash crop and advent of oil in the 1970s. As a matter of fact, Nigeria is among the leading oil and gas producer in the world. It is noteworthy, that various factors determining the corporate capital structure may differ across countries and across sectors in the same country. It is also noteworthy that research efforts on the determinant of capital structure in Nigeria oil industry have been minimal. In the light of the above, the study aimed at bridging the existing gap and employ secondary data to analyze the fundamental determinants of capital structure in Nigerian oil industry in a bid to test the truism of Optimal Capital Structure propositions

LITERATURE REVIEW

Theoretical Background

The term capital structure is used to describe the combination of fixed cost sources of funds and equity used in financing the operation of a firm. Debt is an amount of money borrowed by corporation from lenders, secured against certain assets of the company under the condition that it is to be paid back at a later date usually with interest. Common examples of debt include bond, loans, etc. Equity on the other hand is the amount of capital in the form of common stock

representing ownership interest in a company. Common stock holders are effectively the owners of the firm and their shares are not secured. The level of risk shoulder by the later is high and this accounts for the higher return enjoyed by equity shareholder when the firm prosper. The theory of capital structure is first traceable to the seminar work of Modigliani and Miller (1958) which examines the effect of financing mix on firm value. They assume a partial equilibrium analysis which permits the separation of investment and financing decision and assumes that best combination of debt and equity would seek to magnify firm value. Modigliani and Miller first proposition holds that in the absence of corporate taxes and presence of efficient capital market, the value of the firm depend largely on profit generating power of her asset and does not count whether the assets are financed by debt or equity. In their second proposition which is a restatement of the first, debt is not expensive but risky, the higher risk forced shareholders to require higher returns thereby keeping weighted average cost constant. The above capital structure irrelevance theory received serious criticism from other scholar's especially unrealistic assumptions. Modigliani and Miller (1963) in their second theory took taxes into consideration and conclude that debt is advantageous given its tax deductibility. However the failure to pay fixed interest rate could lead to bankruptcy. While the Modigliani-Miller theorem (1958) does not provide a realistic description of how firms finance their operations, it influenced the early development of both the trade-off theory and the pecking order theory (Odeleye, 2014). Dated back to Kraus and Litzenberger (1973) the trade-off theory of capital structure holds that since higher level of debt could lead to serious financial distress, where benefit of tax shielded earnings may be more than offset by financial distress cost, it is possible for a firm to borrow up to a point where tax shield advantage is equal to possible financial distress cost. Hence firm trades off between the two extremes. The static trade off theory would predict that firms blessed with safe tangible assets and lots of taxable incomes to shield have high debt equity/ratio. According to Myers (1984), the reasoning underlying the trade-off theory is that there is target leverage and that deviation from target could be eliminated via adjustment. He later criticized the theory by claiming that orders of preference exist for firm's capital sourcing and that firm would use internal financing first followed by debt before equity. This theory is known as Pecking order theory. In spite such criticisms of trade-off theory and the pecking order theory, the former remains the dominant theory of corporate capital structure in corporate finance world (Odeleye, 2014).

Empirical Review

Descriptive statistics, multiple correlations and multiple regressions have been used in examination of the determinants of capital structure in Indian large pharmaceutical companies

for the period of 10 years from 2002-03 to 2011-12. Out of eight examined explanatory variables viz size, business risk, earning rate, liquidity, tangibility, debt service capacity, non-debt tax shield and degree of operating leverage, size, earning rate, tangibility and debt service capacity are statistically significant in determining financial leverage. (Kavitha, 2014). Erdinc , Serkan, Ömer and Yıldırım (2011) investigating the role of firm size on capital structure decisions of Turkish lodging companies used a survey questionnaire to obtain information from unquoted Turkish lodging companies. Empirical findings supported the pecking order theory as firm size significantly affects capital structure decisions of Turkish lodging companies. Hedging considerations are the primary factors influencing the selection of the maturity of debt or when raising capital abroad. Franck and Usha (2002) used survey questionnaire to study capital structure choice and its determinants in seventeen European countries in order to explore the link between theory and practice of capital structure. The study found that financial flexibility, credit rating and tax advantage of debt are the most important factors influencing the debt policy while the earnings per share dilution is the most important concern in issuing equity. Pinková (2012) examines the determinants of capital structure of 100 large and medium-sized enterprises of the automotive industry in the Czech Republic using data generated from financial statements of selected companies for the period from 2006 to 2010. The findings seem to be inconsistent with static trade-off theory or the pecking order theory as the analysis of variance, correlation and regression analyses revealed that size, tangibility, profitability and liquidity are prominent in determining capital structure but not growth. Ishaya, Sannomo and Abu (2013) in their assessment of the determinants of capital structure in listed Nigerian Chemical and Paints for the period 2005 to 2009 using secondary data, ordinary least square (OLS) revealed that while tangibility and profitability are significant determinants, size, growth and age do not require serious attention. As in Erdinc et al (2011) and Pinkova (2012), the negativity of the significant coefficients appears to debunk the position of both trade off and pecking order theory. The pecking order theory seemed to be evident in Romanian capital market as listed companies appeared to sustained their assets in equity, commercial debt and financial debt respectively (Mihaela and Andreea, 2005)

Qayyoum (2014) empirically examined the capital structure determinants of Oil and Gas sector in Pakistan between 2007 and 2012. Using firm size as moderator, regression results showed negative relationship between leverage and profitability, positive and statistically significant impact of size but insignificant impact growth, significant negative impact of tangibility and debunk the expected positive relationship between leverage and liquidity. Examining the determinants of capital structure in Oil and Gas firms listed on Karachi Stock Exchange of Pakistan on a data for the period of 2006 to 2011, Saleem et al (2013) employed multiple

regression technique to analyze and found that leverage is significantly determined by firm size, tangibility of assets, profitability, and sales growth and that only sales growth has negative relationship with leverage. Mahvish and Ali Malik (2012) employed panel regression to analyze the effect of profitability, tangibility, size and liquidity on capital structure decisions of the listed companies in oil and gas sector of Pakistan. While the study concludes that capital structure decisions are commonly determined by the factors studied, results indicated that profitability is the only variable that showed negative relationship. Seyed and Hamze (2013) used panel data to investigate determinant of capital structure in U. K. oil and gas and mining industry for the period of 22 years. The results of the fixed effects estimation model have shown that liquidity, profitability and size are the variables which can play a significant role in capital structure decision. Profitability and liquidity relate negatively with leverage. Sanjay (2002) using a sample of 1110 to 1163 manufacturing firms for the period 1998-2002 find that the traditional explanatory variables (fixed asset ratio, firm size, profitability, market-to-book ratio, non-debt tax shields, and earnings volatility) play a significant role in explaining the cross-sectional variation in financial leverage, and broadly have the expected signs. The results thus provide strong evidence in support of the portability of capital structure theory across developed and developing economies. The study's results also point to a few unique aspects of financing behavior in developing countries, from which follow specific implications for further research.

Using a dynamic panel data approach to investigate the Determinants of Capital Structure in India, Guha-Khasnobis and Bhaduri (2002) found that optimal capital structure is mainly determined by factor the factors like size, asset structure, profitability and short-term financial distress cost. Abubakr (2007) employed pooled regression in evaluating the determinants of capital structure of a sample of 22 listed firms during the period 2001 to 2005 in Pakistian. The results of pooled regression model reveal that both Static trade-off theory and Pecking order theory are pertinent corporate capital structure theories to the firms in Pakistani energy sector. Simple linear regression model and descriptive statistics were used by Mohd I M Alnajjar (2014) to analyze data of all industrial sectors of Jordan from the period of 2009- 2011. Findings revealed that low bankruptcy risk and profitability is positively related with debt equity ratio but asset tangibility is negatively related with the capital structure.

Conceptual Framework

Conceptual framework is used to describe the relationships between capital structure and various determining factors as found in the theories. These relationships are summarized in figure 1 and 2 on next page.

Figure 1 Capital Structure and its Determinants

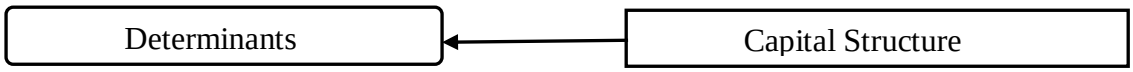
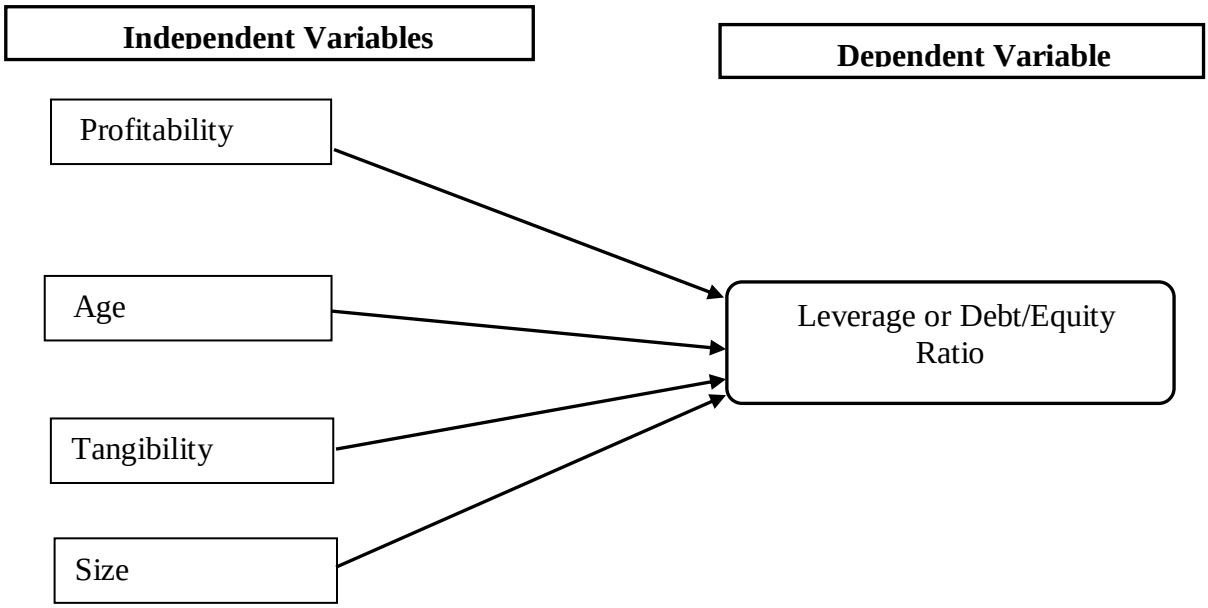


Figure 2: Conceptual Framework of Capital Structure and its Determinants



RESEARCH METHODOLOGY

Data, Sources and Description

The data used for the study are secondary in nature. They are obtained from Nigerian Stock Exchange fact-book and oil firms' annual audited financial reports available online. A panel data of six companies covered a period of six years for the following six variables

Leverage

Leverage is the proportion of debt in a firm's capital structure. Long term debt/equity is the dependent variable in this study, used as a function of other explanatory variables. In this study, leverage is measured by the ratio of debt to equity employed in financing. It is given by:

Leverage = Long Term Debt / Equity

Profitability

This is one of the explanatory variables used in this study. There are various measures of profitability e.g. Return on Equity, Return on Asset and profit after tax. Profit after tax is used in the study and it is given as profit after the payment of fixed obligations less taxes. This figure represents the real profit of the firm.

Firm's age

Firm's age are determined by the duration of existence of a firm in its line of business. Here, firm's age is determined by the number of years in which the firm has been quoted on the Nigeria stock exchange

Tangibility (TANG)

Asset tangibility can be total fixed asset/total asset, total asset etc. This study attempt used total non-current asset less goodwill as a measure of tangibility, since, asset tangibility means long term asset of a company that possesses physical attribute.

Tangibility (TANG) = Total non-current asset - goodwill

Size of the Company (SIZE)

In this study total annual turnover/sales figure of the firm was used to represent size (see Faiza et al, 2013). This is also known as sales, it represents the total oil products sold to the general public.

Population, sample size and Sampling Technique

There is a fluctuation in the number of listed oil and gas firms over the years. Notably six firms whose reports were regularly published over the period 2005-2012 were selected for this study. They are Oando, Mobil, Total, Mrsoil, Conoil and Eternal.

Estimation Technique and Model Specification

Pooled Least Square

Panel Data Regression technique was preferred given its superiority over pure cross section or pure time series. The selection of variables for the estimated model was guided by the relevant theories and existing empirical studies on the subject. Hence the adoption of a modified version of Faiza, et al (2013), Sabir and Ali Malik (2012) both on Pakistan.

$LEVit = \alpha + \beta 1PROFit + \beta 2TANit + \beta 3AGEit + \beta 4SIZEit + £it$ i

Where

i = 1, 2,.....6

t = 1, 2, ...8

LEV= Leverage

PROF = Profitability

TAN = Tangibility

AGE = Firm's age

SIZE = Firm's size

£ = Stochastic error term

$\beta_0, \beta_1, \beta_2, \beta_3$ =Regression parameters, also, the slope of each respective variables

While α= constant or intercept of the model.

Stating the model in a log-linearized form, model becomes:

Log (LEVit)= α + β1Log (PROFit) + β2Log (TANit) + β3Log (AGEit) + β4Log (SIZEit) + £it.....ii

Where:

Log = Natural Logarithm

Fixed Effect Model

Since the pooled OLS model does not distinguish between the various companies in the model, a fixed effect model become necessary in order to take the individuality of each companies into consideration. While the model also assumes that slope coefficients do not vary across individuals as in pooled OLS, intercept differs across them. This is the major assumption under this Model i.e. while the intercepts are cross-sectional variant, they are time invariant, hence the inclusion of subscript i

$Log (LEV_{it}) = \alpha_i + \beta_1 Log (PROF_{it}) + \beta_2 Log (TAN_{it}) + \beta_3 Log (AGE_{it}) + \beta_4 Log (SIZE_{it}) + £_{it}$….iii

This is the major assumption under this Model i.e. while the intercept are cross-sectional variant, they are time invariant, hence the inclusion of subscript i

Random Effect Model

An alternative approach; random effects regression model is applicable where the variables of interest are constant for each firm and such variables cannot be included. REM assumed that since the sampled firm is drawn from larger population, they have the common mean. Hence the division of such omitted variables (i.e α_i in FEM) to mean (α) and variation from mean ($Ɛ_i$) with the later added to the existing error term ($£_{it}$) to form μ_i

$Log\ (LEV_{it}) = \alpha_i + \beta_1 Log\ (PROF_{it}) + \beta_2 Log\ (TAN_{it}) + \beta_3 Log\ (AGE_{it}) + \beta_4 Log\ (SIZE_{it}) + \mu_{it}$…iv

On *a-priori*, coefficients of LPROF, LAGE, LSIZE and LTANG are expected to be positive as guided by the principles of economic theory.

Statement of hypothesis

i. H_{01}: profitability has no significant effect on Nigerian oil industry capital structure

ii. H_{02}: age does not have a force to bear on Nigerian oil industry financing decision

iii. H_{03}: tangibility is not a significant determinant of Nigerian Oil sector financing mix

iv. H_{04}: size does not have a significant impact on Nigerian oil industry financing option

EMPIRICAL RESULTS

Pooled Regression Result

Table 1: Summary of Pooled Least Square Result (E- Views)

Variables	Coefficients	Standard Error	Probability
C	0.175489	2.549157	0.9455
LPROF	0.487632	0.133812	0.0008
LAGE	1.082547	0.377928	0.0068
LTANG	-0.268429	0.191808	0.1698
LSIZE	-0.407839	0.127974	0.0029

R^2 = 0.452507 **Adj R^2 =** 0.394876 **F-STAT =** 7.851812 **DW-STAT =** 0.812647

The relationship between the dependent variable (LLEV)and the independent variables (LPROF, LAGE, LTANG, and LSIZE) in the table above can be expressed mathematically as:

LLEV = 0.175489 + 0.487632LPROF + 1.082547LAGE - 0.268429LTAN - 0.407839LSIZE

From the constant effect result in the above table 1, the coefficient of constant parameter of the oil firms shows a positive figure of 0.175489, which implies that if all the explanatory variables are held constant, a unit increase in all other variables other than LPROF, LAGE, LTANG, and LSIZE will bring about 0.175489 units increase in LLEV. Holding other factors constant, LPROF, LAGE are positively related to LLEV such that a unit rise in LPROF and LAGE lead to0.487632 and 1.082547 units rise in LLEV respectively. Conversely, LTANG and LSIZE have a negative relationship with LLEV. This implies that if all other factors are held constant, a unit increase in LTANG and LSIZE will bring about 0.268429 and 0.407839 decreases in LLEV respectively. Worst still, these, in addition to the failure of the model to distinguish between the companies lead to FEM estimation.

Fixed Effect Model (FEM)

Table 2: Summary of Fixed Effect Model Result

Variables	Coefficients	Standard Error	Probability
LPROF	0.360585	0.125597	0.0071
LAGE	0.199960	0.752284	0.7920
LTANG	-0.258350	0.144765	0.0835
LSIZE	-0.290914	0.114084	0.0156
Fixed Effects			
OANDO--C	2.406607		
MOBIL--C	3.763751		
TOTAL--C	2.595638		
MRS--C	1.996398		
CONOIL--C	1.991889		
ETERNAL--C	1.918027		

R^2 = 0.797083 **Adj R^2 =** 0.741742 **F-STAT =** 43.20928 **DW-STAT =** 1.762583

Table 2 shows a replica of relationship between the dependent variable (LLEV)and the independent variables (LPROF, LAGE, LTANG, and LSIZE) in table 1. Similarly, differential intercept coefficient relate positively with LLEV for each firm which further confirms the positive intercept in Pooled OLS result. Hence, if all independent variables are held constant, a unit rise in all other factors will bring about 2.406607, 3.763751, 2.595638, 1.996398, 1.991889 and 1.884326 units increase in LLEV for Oando, ExxonMobil, Total, Mrsoil, Conoil and Eternal oil respectively. The differential intercept may be due to unique feature of each company.

Random Effect Model

Table 3: Summary of Fixed Effect Model Result

Variables	Coefficients	Standard Error	Probability
C	0.486275	2.738385	0.8600
LPROF	0.537155	0.140903	0.0005
LAGE	1.217119	0.363285	0.0018
LTANG	-0.283150	0.225011	0.2159
LSIZE	-0.475433	0.136583	0.0013
Random Effects			
OANDO--C	0.057808		
MOBIL--C	-0.788863		
TOTAL--C	0.096769		
MRS--C	0.546649		
CONOIL--C	0.225999		
ETERNAL--C	-0.140063		

R^2 = 0.207757 **Adj R^2 =** 0.124363 **DW-STAT =** 0.624621

Again, there is LPROF and LAGE maintain positive relationship as LTANG and LSIZE maintain negative relationship with LLEV. The average intercept coefficient for all the oil companies maintains insignificant positive relationship with LLEV. However the differential intercepts show varying types of relationship with LLEV as it shows positive relationships0.057808 in Oando, Total, Mrsoil and Conoil and negative relationship in Mobil and Eternal. Hence holding average intercept, LPROF, LAGE, LTANG, and LSIZE constant, a unit rise in differential intercept tend to increase LLEV by 0.057808, 0.096769, 0.546649, 0.225999, and reduce it by 0.7888, 0.140063units in Oando, total, mrs, conoil, and ExxonMobil, eternal respectively.

Tests for the Significance of Parameters (t-Test)

The t-test is done to test the significance of each of the explanatory variables using the student t-distribution test. It is carried out on a two tail test and by comparing the T-Cal and the T-tab.

Decision Rule: If T. Cal > T-tab, Reject H_0 and accept H_1. T-test would be employed at 95% confidence level i.e. 5% significance level.

Degree of freedom (DOF) = n-k

Where, n = number of years of observation, K = number of variables

DOF = 48 - 5 = 43

Table 4: Summary of T-Test for Pooled Least Square

Variables	T-calculated	T-tabulated	H_0	H_1	Remark
LPROF	3.644155	2.021	Reject	Accept	Significant
LAGE	2.864426	2.021	Reject	Accept	Significant
LTANG	-1.399464	2.021	Accept	Reject	Insignificant
LSIZE	-3.186879	2.021	Reject	Accept	Significant

The beauty of Pooled OLS result lies in the significance of all explanatory variables with the exception of LTANG. Table 4 shows that all variables are significant with their respective calculated value of “T” showing a value greater than the t-table except for LTANG showing a lesser value.

Table 5: Summary of T-Test for fixed Effect Model

Variables	T-calculated	T-tabulated	H_0	H_1	Remark
LPROF	2.870959	2.021	Reject	Accept	Significant
LAGE	0.265803	2.021	Accept	Reject	Insignificant
LTANG	-1.784616	2.021	Accept	Reject	Insignificant
LSIZE	-2.550001	2.021	Reject	Accept	Significant

Table 6: Summary of T-Test for Random Effect Model

Variables	T-calculated	T-tabulated	H_0	H_1	Remark
LPROF	3.812223	2.021	Reject	Accept	Significant
LAGE	3.350316	2.021	Reject	Accept	Significant
LTANG	-1.258383	2.021	Accept	Reject	Insignificant
LSIZE	-3.480924	2.021	Reject	Accept	Significant

Table *5* Shows that LPROF and LSIZE are significant with their respective t-calculated greater that the t-table while the two other AGE and FA happen to be insignificant. From *Table 6*, it can be seen that all the explanatory variables except LTANG used in this study are statistically significant in determining LLEV.

Tests for the Overall Significance of the Model (f-Test)

The F-test shows the statistical significance of the whole model. It is carried out on a tail test and by comparing the F-Cal and the F-tab. The hypothesis for the test is formulated as:

H_0: There is no overall significance in the model

H_1: There is overall significance in the model

Decision Rule: If F-Cal > F-tab, accept H_1 and reject H_0 and vice versa

F-test would be employed at 95% confidence level i.e. 5% significance level.

Hence, (F_{95} V_1, V_2) dof

Where $V_1 = K - 1 = 5 - 1 = 4$; $V_2 = N - K = 48 – 5 = 43$

($F_{95} \approx 4, 43$) dof

F-tab = 2.61 *(as obtained from statistical table)*

F-cal = 7.851812 (obtained from fixed panel result output; see appendix iii)

Table 7: Summary of F-test for Pooled OLS

Summary		Decision		
F-Calculated	F-Tabulated	H0	H1	Remark
7.851812	2.61	Reject	Accept	Significant

Table 8: Summary of F-test for Fixed Effect Model

Summary		Decision		
F-Calculated	F-Tabulated	H0	H1	Remark
43.20928	2.61	Reject	Accept	Significant

Source: See computed result in appendix

Table 7 and 8 show that F-calculated is greater than F-table hence we reject the null hypotheses and conclude that that the whole model is significant.

Degree of Determination (R^2)

From table 1, Adjusted R^2 of 0.39 means dependent variables offer below average explanation for fluctuation in dependent variables in the Pooled OLS model. It is obvious from the FEM results that the adjusted R^2 has increased substantially as about 74% of the variation in LLEV can be explained by LPROF, LAGE, LTANG and LSIZE. Lastly the REM as found in table 3 shows that the explanatory Variables can only account for about 12% of the changes in LLEV.

Tests for the Presence of Autocorrelation in the Model

The Durbin-Watson test is employed to check for the presence or absence of serial correlation i.e. autocorrelation in the model. This test is carried out using the DW Statistics. DW Statistics value of 0.81, 0.62 and 1.76 are obtained from Pooled OLS, REM and FEM respectively. Durbin Watson values of 0.81 and 0.62 imply a presence of positive Autocorrelation while only FEM shows there is no autocorrelation in the model.

SUMMARY

The study intends to empirically examine the determinants of capital structure in Nigerian oil and gas sector. The study found that while, intercept, profitability (LPROF) and age (LAGE),relate positively with capital structure (LLEV); Tangibility (FA) and size (LSIZE) shows a negative relationship with the oil firms capital structure (LLEV) in constant, fixed and Random Effects. Overall, all the independent variables are statistically significant in explaining the financing mix of Nigerian oil and gas industry with the exception of LTANG in the Pooled and REM in addition to LAGE in FEM. FEM appears to produce a superior results as Adjusted R^2 offers a significant explanation of variation in Nigerian oil Sector capital Structure and Durbin Watson depicts the absence of serial correlation. This is usually the case where number of time series data (T=Year) is large and number of cross sectional units (N=companies) is small (Gujarati, p616, 2013). The superiority of FEM informs its adoption for discussion and concluding remark.

DISCUSSIONS AND CONCLUSION

FEM result shows that increase in profitability will cause firm to increase the use of debt in financing its operation. This is in consonance with our a-priori expectation, but not consistent with findings of Qaygoum (2014); Faizat et al (2013); Sabir and Ali Malik (2012); Seyed and Hamze (2013) and Guha-Khasnobis and Bhaduri (2002). It however provides a confirmation of

Static Trade-off Theory which holds that highly profitable firms should use more debt because there is a little risk of bankruptcy and the tax shield is substantial. Also as the number of years over which the companies have been listed increases, the ratio of debt to equity increases. Age essentially defines company's access to capital market to raise debt or equity. The older the firm, the better the public image and the more acceptable the firm is adjudged to be. Despite the fact that equity and debt are available to firms in the market, the preference for debt as revealed by the findings could be in order to enjoy tax shield or avoid dilution of ownership. This is consistent with the findings of Taiwo (2012). While Lenders may wary of companies with high leverage, blue chip companies are able to issue even naked promissory notes or commercial paper as subscribers rely on their financial strength and stability

The negative relationship between Tangibility and Leverage is at variance with the Static Trade off Theory which suggests that companies with safe tangible assets should use more debt while unprofitable companies with intangible asset should use less debt. it however supports the findings of Sobia Qaygoum (2014) and Faizat et al (2013). This is an indication of efficiency in the use of firm's assets to generate after tax profit where certain proportion are reserved for future use rather than big companies relying on tangible asset as collateral for obtaining long term loan. Lastly, the result reveals that an increase in size as measured by sales' turnover tends to reduce the use of debt in the capital structure. This is possible where there is high cost of operation that tends to reduce profitability in the industry thereby making debt unattractive.

LIMITATIONS

The data used in the study are based on available information from the secondary sources. Hence exposed to possible observational error either due to omission or commission as well as any inherent error in the publish data obtained from Nigerian Stock Exchange fact-book and oil firms' annual audited financial reports available online. However, these limitations will and do not undermine the outcome and conclusions reached in the study but as noted by Gujarati (2013), it must be borne in mind that the result obtainable is as good as the quality of data used.

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