



Capital Structure and the Profitability of Agro-Allied Companies in Nigeria.

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ABSTRACT

The major aim of this research is to find out the effect of capital structure on the profitability of agro-allied companies quoted in Nigeria. The study covered ten agro-allied companies quoted in the Nigerian Stock Exchange Market from 2005 - 2015. The study adopted ex post facto design. The population covered all the ten companies mentioned above. Census sampling was used for the study as a result of the handy nature of the population. Data were obtained from secondary sources while ordinary least square regressions were used as the technique for data analysis with the aid of SPSS version 22.0. at 0.05 level of significance. The findings revealed that capital structure serves as the main determinant of the profitability of agro-allied companies quoted in the Nigeria stock exchange market. Based on the above finding, the researchers therefore recommend that the managers of these companies should seek the services and advise of financial experts on the right choice of financial mix which would enable them to meet the needs of the various stakeholders in and outside their companies as to ensure their continued survival in the face of the current economic recession in Nigeria.

Keywords *Agro-allied companies, Capital structure, Net profit, Nigeria, Profitability*

Introduction

The significance of financing choice need not be over stressed since various factors which can bring about the failure of a business can be resolved using the right financing choice which will help the organisation to achieve its objectives (Salazar, Soto & Mosqueda, 2012). Financing choice give to a particular capital structure, sub-optimal capital structure choice can result to business collapse. The major problem facing managers and shareholders is to know if optimal capital structure actually exists (Mwangi, Makau & Komsimbei, 2014). Indeed, while the various theories have not made the relationship between capital structure and firm profitability any easier to determine in developed

capital markets, the circumstances appears even more difficult in a developing financial market such as Nigeria with imperfect market conditions, social-economic and political instabilities. Therefore, no attempt made towards discovering the exact capital mix that optimizes a company's profitability is too much especially in developing market such as Nigeria (Igbinsosa, 2015). The best capital structure is assumed to be in existence when debt obligations and equity of a company can be mutually joined together as to cut down the cost of funds as to increase the company's profitability (Tailab, 2014).

The major aim of all capital structure decisions is efficient utilisation of financial resources and the

direct means of ascertaining the impact of any funding decision is to study the outcome of such decision on the company's profitability (Mwangi et al, 2014).

Funding decision is a vital decision; this is because it has directly relationship with the risk and return of a company. Unplanned financing decision can amount to increase cost of funds; as a result reducing the company's profitability whereas efficient financing choice does the opposite.

The profitability of a firm reflects how effectively the firm has been managed and resources utilized (Ogebe, Ogebe & Alewi, 2013). According to Barclay, Smith and Morellec (2006), profitability can be measured using returns on investment, residual income, earnings per share, dividend yield, price/earnings ratio, growth in sales, market capitalization, etc. But this study measured profitability in terms of the net profit earned by the companies under study.

Statement of the problem.

Government and the general public have been working vigorously as to create conducive atmosphere for carrying out commercial activities in Nigeria, undoubtedly, a number of companies recorded very high performance. Some on the other hand, are encountering decline in profitability and some have even been liquidated while others were delisted from the Nigerian Stock Exchange (NSE) in the most recent decade (Kibet, Tenei & Mutwol, 2011).

It is also worthy to note that some companies in Nigeria do not plan their capital structure, this results in financial decisions being taken without formal planning. However, such companies are likely going to succeed in a short period of time, but most likely, may encounter challenges in raising capital for future business operations and this may result to corporate failure (Aruogu, 2003). Hence, the need to ascertain the effect of capital structure choice on profitability of agro-allied companies quoted in the NSE. The specific aim of this study is to determine the effect of financing choice (capital structure) on the net profit of agro-allied companies in Nigeria while the hypothesis emanating from the above specific objective is;

Ho: Capital structure does not affect the net profit of agro-allied companies operating in Nigeria.

Review of related literature

Profitability

Chen & Hammes (2004) is of the opinion that Profitability shows how efficient a manager uses total assets to create income. Investors are interested in the profitability of a company due to the fact that it can be used to forecast future income of that company. External shareholders will, hence, take account of profitability in their examination of the company if they want to make their investment choice. Conventional finance literatures state that cost-effective companies use more of borrowed fund to finance their business operations, reason been that they have low bankruptcy rate. Baral (2004) affirm this by saying that cost-effective companies have greater ability to access loan facilities. Due to their high profitability, fund providers will be more eager to grant them credit facilities.

Nwude (2004) is also of the view that profitability is the ability of a company to earn profit from its business activities and make adequate returns to investors. The higher the profit ratio per Naira sales made the better. To him, the profitability of a company can be measured by;

Net Profit: Net profit: Net profit is usually found in the statement of comprehensive income of companies. It is made up of gross profit in addition other income like discount received commission received, minus the costs consumed during selling process which has not been deducted already from the cost of sales.

This can also be seen as what is left of the gross profit after all other expenses have been deducted. If the net profit is inadequate, the firm will fail to achieve satisfactory returns on shareholder's funds (Wood & Sangster, 2005).

A company with high net profit a better opportunity to endure harsh economic conditions such as fall in sales price, high costs of production or decline in demands for products due to fall in consumer purchasing power. In the same way, company with increasing net profit has the chance to enjoy good economic situation, like rise in price, fall in production cost or growing demand for goods and services. An analyst will be able to interpret the profitability of a company more meaningfully if he/she evaluates both gross profit and net profit jointly (Pandey, 2006).

Capital structure

Capital structure is the blend of internal and external sources of funds used by the companies to finance their assets (Amara & Aziz, 2014). Company's capital structure consists of different sources of fund, normally presented in its financial statements (Modugu, 2013). Debt and equity make up the various sources of fund available to a company and also reveal how the company is owned (Huang & Vu Thi, 2003). Brigham and Daves (2004) state that how a company select the mixture of debt and equity in their business operation is dependent on a range of variables such as the peculiar features of the firm, age of the firm, economic situations, perceptions and aims of management.

Karadeniz, Kandir, Balcilar, and Onal (2009) are of the opinion that that management's initial concern is to assess the various expenditure and profit which comes as a result of combining debt obligation and equity.

Managers' choice of capital mix will depend on the merit and demerit of each sources of funding. These researchers are also of the opinion that managers can choose a mixture of debt and equity which can reduce their cost of capital as well as increase their profitability.

Firm characteristics and capital structure decision

Consequently, research has revealed that capital structure vary in different geographical locations of the world, factories as well as companies operating in a given business (Zietlow, Hankin & Seidner, 2007; Sibilkov, 2009). This supports Baral's (2004) opinion that variation in financing choice among companies could be as a result of the special characteristics which such business posses.

Theoretical framework

Over the years, lots of theories on the concept of capital structure have been developed but this study only focussed on Modigliani and Miller theory and agency cost theory.

Modigliani and Miller

Roshanak (2013) is of the opinion that contemporary theory of capital structure originated from Modigliani and Miller in 1958 which was first available in The American Economic Review.

Hillier, Ross, Westerfield, Jaffe and Jordan (2010) state that Modigliani and Miller's theory is usually seen as the starting point of the present corporate finance. They were of the opinion that company's financial choice does not affect its profitability. They alleged that the company worth is decided by the dynamic side of their statement of financial position. Companies generate value by their earning power and risk of their asset.

The first proposition of the MM theory is about financial choice (capital structure), and the next is about cost of funds. The original theorem starts that the worth of a company who uses debt to finance its business operation is the same with those of companies who do not use debt capital. The next assumption goes together with the first. The second proposition of MM theory states that the cost of equity is a linear function of the firm debt/equity ratio (Modigliani and Miller, 1958). M and M (1958) enhanced their proposition as a result of the fact that perfect market does not exist anywhere in the world. Taxes are deductible in many countries of the world; therefore, value of the firm which uses debt to finance its business operations exceeds the value of the ones which do not. The effect of debt offers tax protection with equal worth of the interest deducted. This, therefore, means that any company, who wishes to raise its worth, must have to be financed using debt capital alone. Hence, the assumptions became more elaborate as a result of the introduction of tax protection.

Agency cost theory

Roshanak (2013) also states that agency theory is concern with conflicting interest which arises when organisation's management is separated from their owners. There is always a conflict interest among the employees (e.g. the management), and the owners of the companies (e.g. the stakeholders). This theory argues that by separating management from ownership, conflict of objective usually occur among the investors and the management of the organisation. These conflicts results to agency costs. This theory equally states that management of companies try to protect their selfish interest instead of aliening it with that of the stakeholders of the organisation. The theory therefore encourages greater use of debt to equity this is because more debt will attract more interest payment which on the other hand, will force management to work very hard as to pay back the interest on the borrowed fund as well as dividend.

This study is anchored on the agency cost theory, reason been that when companies borrow to finance their business operations, their managers tend to work very hard in order to make more profit as to pay interest on the borrowed fund as well as dividends to the shareholders.

Empirical review

Njagi (2013) studied the relationship between capital structure and financial performance of agricultural companies quoted at NSE. The population of the study was up of 7 quoted agricultural companies quoted on the NSE Market under agricultural sector. The data were gathered from secondary sources. The study made use of the descriptive quantitative method of data analysis while inferential analysis was used as the analytical techniques. From the Adjusted R-squared, it was discovered that there was a difference of financial performance of agricultural firms listed on NSE due to the differences in their Short term debt, long term debt and profits. The study showed that Capital structure was responsible for the profitability of agricultural companies listed on the NSE. The correlation analysis revealed major linkage among financing choice and company's profitability.

The study lastly discovered that the result from analysed data is enough for making a conclusion that short term debt, long term debt and profits have strong relationship with the profitability of agricultural companies quoted on the NSE. The researcher concluded by saying that listed firms in the NSE need a strong capital structure which would help them to resist financial crises and as well give shareholders security for their investment even in the period of economic crisis or recession.

Hassan, Ahsan, Rahaman and Alam (2014) in their work influence of capital structure on firm's performance investigated thirty six Bangladeshi companies quoted in DSE between 2007–2012. They adopted 4 performance measurement criteria; earnings per share (EPS) return on equity (ROE), return on asset (ROA) and Tobin's Q; as dependent variables and 3 financial choice ratios; short-term debt, long-term debt and total debt ratios; as independent variables. They adopted pool panel data regression technique and discovered that (EPS) is significant completely connected to STD but has significant negative linkage to LTD. They also found out a significantly negatively

relationship among Return on Assets and capital structure. They equally revealed that statistically significant relationship does not exist among capital structure and company's financial performance as calculated by Returns on Equity and Tobin's Q. Nevertheless, they finished by saying that capital structure has negative effect on company's profitability which is in agreement with the Pecking Order Theory.

Tailab (2014) analysed the effect of capital structure on performance. 2 major research variables were used: For profitability, (ROA) as the ratio of net income to total assets, and (ROE) as the ratio of net income to total shareholders' equity were used to proxy financial performance while capital structure was proxy by STD, LTD, TD, debt to equity ratio and firm's size. Thirty Energy American firms were used as the sample for 9 years between 2005 – 2013. Data were obtained from Mergent online. It was analysed by means of Partial Least Square version three. The regressions result revealed 10% of ROE and 34% of ROA which were occasioned by the independent variables. The result of the study also revealed that total debt had a significantly negative effect on Returns on Equity and Returns on Assets, hence, size measured by sales had significant negative impact merely on Returns on Equity of the American firms. Nonetheless, short debt has significant positive effect on Return on Equity. immaterial relationship whether positive or negative was revealed among LTD, debt to equity and size in terms of total assets and profitability. Generalisation on the outcome of the study is limited due to the small size of the population.

Igbinsosa (2015) examined the long and short-run relations among capital structure and company's performance, data was obtained from financial reports of 62 non-banking firms quoted on the Nigeria stock exchange market. The study discovered that listed companies made more use of long-term debts in the short run to boost their profitability and earnings but afterwards, as they make more profit, they would resort back to internally generated revenue. Furthermore, it discovered that combination of debt and equity which optimises return on assets varies from that which optimises return on equity. They also concluded that long-term debts contribute positively and significantly to the returns of equity owners. They equally suggested companies should

determine the proper mix of capital which would optimise their performance.

From the empirical review, the researchers discovered paucity of literature on effect of capital structure and the profitability of agro-allied companies in Nigeria especially at this critical period of economic recession occasioned by the fall in price of crude oil in the global market. Hence, the findings of this study will contribute significantly towards filling the above mentioned gap.

Methodology

The study adopted ex-post facto design. This is because the researchers used historical data gotten from the financial statements of the companies under review which the researchers do not have control over. The population of the study is made up of 10 agro-allied companies quoted in the Nigerian stock exchange from 2005 to 2015. These companies were selected based on the availability of their financial statements on the website of the Nigeria stock exchange as at the time this study was carried out. Census sampling was used for the study as a result of the handy nature of the sampled elements. Data were obtained from secondary sources while the dependent variable for the study which is profitability was proxy by net profit and the independent variable; capital structure was proxy by STD, LTD and equity. Age of the companies on the other hand served as a control variable.

Model Specification

The following specified the functional relationship of the study:

$$NP = f(\text{Eqty, STD, LTD, A})$$

Therefore, the models for the study would be:

$$NP = \hat{a} + b_1\text{Eqty} + b_2\text{STD} + b_3\text{LTD} + A + u_{i2}$$

Where, $\hat{a}$ = Intercept (constant term).

b_1 = First slope (coefficient).

b_2 = Second slope (coefficient).

b_3 = Third slope (coefficient).

u_i = Error term on respective equations.

NP = Net Profit

Eqty = Equity

STD = Short Term Debt

LTD = Long Term Debt

A = Age of the companies.

The a priori expectation of this study is that equity, STD, LTD and age would have significant and

positive effect on the net profit of agro-allied companies operating in Nigeria. Ordinary least square regressions were adopted as the technique for data analysis with the aid of SPSS version 22.0. at 0.05 level of significance while decision rule for the study was restricted to the p-value of F-statistics, which should be less than 0.05 on one tailed test and 0.01 on a two-tailed test. This implies that if the p-value is more than the benchmark value of 0.05 or 0.01, the null hypothesis would be accepted and the alternate rejected.

Data Presentation

Descriptive statistics of the variables under study

Statistic	Net Profit	Equity	Long Time Debt	Short Time Debt	AGE
Mean	7061587	33979840	13198622	23039997	38.4215
Median	2856383	18567847	6235457.	13269494	34.0000
Maximum	43080349	2.32E+08	73351269	1.41E+08	69.0000
Minimum	-7471272	-3071173.	229490.0	126406.0	11.0000
Std. Dev.	10479488	49419322	15341392	28060969	16.6516
Skewness	1.796247	2.481159	1.568255	1.919765	0.2016
Kurtosis	5.931079	8.933173	5.238733	7.009673	1.7684
Observations	110	110	110	110	110

Source: Researcher, 2017

The table above represents the descriptive statistics of the variables under study. Some of the statistics (mean and median) measure the averages while others measure the variability (standard deviation, maximum and minimum) and partitions (skewness and kurtosis) of the set of data collected. The mean of the variables under study (Net profit, Equity, STD, LTD and Age) of the ten (10) companies for the 11years period under review (2005-2015) are shown in row 1 of the table above while the standard deviation corresponding to each of the mean are shown in row 5 of the same table. Furthermore, the results indicated that 110 observations were collected for each variable for the entire 10 companies except where there are missing data.

Analysis of the formulated hypothesis

Ho: Capital structure does not affect the net profit of agro-allied companies operating in Nigeria.

Regression Analysis of Capital Structure on Net Profit

Variable	Model Method		
	Ordinary Least Squares	Fixed Effect Model	Random Effect Model
Constant (C)	-5189277*** (0.0022)	-4023059 (0.5206)	-5687905 (0.1902)
Equity	-0.0145 (0.5066)	-0.0028 (0.8637)	-0.0037 (0.8157)
Short Term Debt	0.1127** (0.0132)	0.0761** (0.0369)	0.0757** (0.0316)
Long Term Debt	0.2855*** (0.0001)	0.2200*** (0.0000)	0.2206*** (0.000)
Age (Years)	165983*** (0.0009)	169775.1* (0.3337)	208139.3* (0.0627)
R ² -Adjusted	0.64	0.48	0.86
F-value	46.48*** (0.0000)	49.64*** (0.0000)	24.37*** (0.0000)
Durbin-Watson (D.W)	0.35	0.79	0.74
() – P-value, * – significant at 10% HausmanTest p-value= 0.917 ** – significant at 5% *** – significant at 1%			

Source: regression analysis results, 2017

The table above represents the result of regression of equity, STD, LTD and age on net profit. The model could be represented thus:

Ordinary least squares Model:

$$NP = -5199277 - 0.0145 \text{ Equity} + 0.1127 \text{ STD} + 0.2855 \text{ LTD} + 165983 \text{ Age}$$

Fixed Effect Model:

$$NP = -4023059 - 0.0028 \text{ Equity} + 0.0761 \text{ STD} + 0.22 \text{ LTD} + 169775 \text{ Age}$$

Random Effect Model:

$$NP = -5687905 - 0.0037 \text{ Equity} + 0.0575 \text{ STD} + 0.2206 \text{ LTD} + 208139 \text{ Age}$$

Discussion and Findings

The table above is the result of the regression analysis (using Ordinary Least Squares, Fixed Effect and Random Effect Models) of capital structure (Equity, STD, LTD) and Age on profitability (Net Profit) of agricultural and agro-allied companies in Nigeria of the 10 companies under study for the 11years period. The result of the three competing models showed that STD, LTD and Age are statistically significant ($p < 0.05$). The model showed a highly significant ($P < 0.05$) F-value indicating an overall significant of the goodness of fit. The Random Effect Model could be considered as the best judge from its high F-value, high R² and higher Durbin Watson (D.W) value with highly significant ($p < 0.01$) regression coefficients as well as, Hausman Test favouring it. Using the Random Effect Model, the value of the constant, -5687905 though not significant indicates the average value of net profit when there is no equity, STD, LTD and Age. The value -0.0037 which is the coefficient of the equity is again not significantly different from zero ($P > 0.10$).

The value 0.0757 which is the significant coefficient ($P < 0.05$) of STD implies that an increase in STD by ? 1 would lead to an increase in Net Profit by ? 0.0757 when equity, LTD and Age are remaining the same. The value of 0.2206 indicates that when other variables in the model are held constant, a change in LTD by ? 1 would produce a corresponding increase in Net Profit by ? 0.2206. While the value 208139.3 implies that an increase in the age of the companies by 1 year would result in ? 208,138.3 increase the Net Profits of agro-allied companies under study when other variables in the model remain unchanged. The outcome of the analyses undoubtedly showed that capital structure significantly affect the net profit of agro-allied companies operating in Nigeria. This is because the regression result revealed a coefficient of determinant (r^2) of 0.86 and a p-value = 0.0000 < 0.05. Hence, the null hypothesis was rejected in favour of the alternate. This is also in line with the a priori expectation of positive and significant effect of capital structure on the net profit of agro-allied firms quoted in the Nigeria stock exchange. This is against the study carried out by Aransiola and Aransiola (2015) who found a negative effect of capital on the profitability of companies in Nigeria.

Conclusion and recommendations

From the result of the findings, the researchers therefore conclude that the choice of capital structure plays a critical role in determining the profitability of agro-allied companies quoted in the Nigeria stock market. Hence, the researchers recommend that the managers of these companies should seek the services and advise of financial experts on the right choice of the financial mix which would enable them to meet the needs of the various stakeholders in and outside their companies as to ensure their continued survival in the face of the current economic recession in Nigeria.

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