

# Determinants of capital structure: A study of Nigerian quoted companies

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## Abstract

This paper examines the determinants of corporate capital structure of thirty-five firms listed on the Nigerian Stock Exchange between 2006 and 2012. Panel data methodology was employed and pooled Ordinary Least Squares was (OLS) used to estimate the coefficients of six firm-specific determinants. Results reveal that the three leverage ratios (Total Leverage Ratio, Long-Term Leverage Ratio and Short-Term Leverage Ratio) are negatively and significantly related with profitability. Firm size and asset tangibility are however, positively and significantly related with leverage proxies. The outcome of the study shows that Nigerian firms rely heavily on the use of retained earnings (internal source) and where funds raised are insufficient, they then seek for external source. This is in line with financial theory and provides evidence in support of Pecking Order Theory.

**Key Words:** Capital structure, Leverage, Pecking order, Static trade off, Nigeria

**Acknowledgements:** The authors wish to thank Professors A.S Ogunsiji, B.A Oyelere, Ajetomobi, J. Adewoye, Mrs. Abiola Idowu, Dapo George, Mrs Osoba, Owolabi Usman, Doctors, Akeem Salami, Mrs. R. Ojokuku, C.E. Anene, Olatunji, Moroof Oladejo, H.T. Fashina, Adebisi Aboosedo, Kehinde Obasan, Bashiru Raji, Bolaji Adesoye and other participants at the Faculty of Social & Management Sciences, Olabisi Onabanjo University, Ago-Iwoye and Ladoko Akintola University of Technology, Ogbomoso, Nigeria for their helpful suggestions during the presentation of the earlier versions of this paper.

## 1. INTRODUCTION

Organisations in financing their capital expenditure are usually faced with the decision of financing mode. Theoretically, there are two broad sources of financing- equity and debt. It is the proportional mix of these sources that is termed capital structure. The capital structure decision is acknowledged as a significant managerial decision and perhaps one of the most controversial areas of research in Corporate Finance/ Financial Management because of the possible effects it will have on corporate performance and shareholders' interests. The capital mix and its cost are used as benchmark when raising funds for new investment. Using more or less debt in the business has an impact on firm value. Dragota (2006) expresses the need for the firm to establish a certain proportion for debt and equity that maximizes the values of the firm or minimized weighted average cost of capital (WACC).

There is no consensus on determinants of capital structure from what empirical literature has provided for developed and developing countries. For instance, in Nigeria, Soyode (1978), Oyejide (1987), Soyibo (1996), Ariyo (1999), Salami (2000), Salawu (2007), Salawu and Agboola (2008), Iwarere and Akinleye (2010), Oke and Afolabi (2011) and Akinlo (2011) investigated the determinants of capital structures. They reported mixed results in their studies, which could be due to adoption of different methodologies, especially in the description of their variables and choice of time frame.

Sequel to mixed results from previous Nigerian studies on determinants of capital structure and the paucity of such studies conducted so far, there existed a knowledge gap, hence the need for this study. The firm-specific factors that determine the capital structure of thirty five (35) non-financial firms quoted on the stock exchange in Nigeria was undertaken.

The rest of the paper is organized as follows: Section 2 discusses on the literature review. In section 3, the

methodology of this study is considered. Data analysis and interpretation are made in section 4, while section 5 concludes the study.

## 2. LITERATURE REVIEW

The literature of capital structure decision always starts with the seminal work of Modigliani and Miller (1958) who argued that mode of financing does not matter. According to them, in a perfect market environment, a firm can employ any combination of debt and equity without the value of the firm being affected. The Modigliani – Miller (MM) theory may be intuitive, but is it credible? The theory suffers from its assumptions. Are capital markets really sufficiently perfect? Also there is a possibility of bankruptcy and if these costs according to (Pandey 2003) are significant, a levered firm may be less attractive. This suggests that at least there is a limit to which firms can make use of debt source of financing. The perceived risks of personal and corporate gearing may be different because of limited liability on corporate debt. Personal borrowing costs are generally higher than corporate costs. Transaction costs also restrict arbitrage.

The myriads of limitations caused by the assumptions in the MM theory gave rise to some other theories among which are the Static Trade Off and Pecking Order theories. These theories were formulated to explain the determinants of capital structure. Static Trade Off theory presumes that a firm sets up a debt target ratio and gradually moves towards it. This target would be set as a tradeoff between the costs and the benefits of debt, that is, bankruptcy costs against tax benefits. Evidences in favour of the Static Trade Off (STT) and optimal capital structure can be seen from the work of authors such as Schwartz and Aronson (1967) who documented evidence of strong industry effects in debt ratios, which they interpreted as evidence of optimal ratios. Long and Malitz (1985) show that leverage ratios are negatively related to research and development expenditure, which they used as a proxy for intangible assets. Other studies provided more direct evidence that firms adjust toward a target debt ratio. Taggart (1977), Marsh (1982), Jalilvand and Haris (1984) Auerbach (1985), Givoly, Hayn, Ofer and Sarig (1992), Opler and Titman (1994) and Flannery and Rangan (2004), Abdeljawad, Mat-Nor, Ibrahim and Abdul-Rahim (2013) and Haron (2014) find mean reversion in debt ratios or evidence that firms appear to adjust toward debt targets. Salawu and Agboola (2008) using 33 non-financial listed firms submit that the STT explains the financing behaviour of the selected firms during the period 1990 to 2004.

The Pecking Order Theory (POT) propounded by Myers (1984) and Myers and Majluf (1984) admit that firms follow a hierarchy of financial decisions when establishing its capital structure. Initially, firms prefer internal financing and if this is not sufficient they then go for external financing. The sequence of external financing will be the issuing of debt and convertible debt, before opting for issuing equity shares. The POT holds that firms that are more lucrative are naturally less indebted since they can finance their new capital projects without the need to issue debt or equity. The reluctance in issuing new equity apart from the transactional cost involved, according to Myers and Majluf (1984) is due to asymmetric information between the management and the new shareholders.

Among authors that have tested and confirmed the prediction of the POT are Sogorb- Mira and Lopez- Gracia (2003), Gaud and Bender (2004), Baral (2004), Abor and Biekpe (2005), Chen and Zhao (2005), Bharath, Pasquariello and Wu (2006), Abor (2008), Kajola, Okewale and Desu (2008), Abdeljawad, et al (2013), Haron (2014), Fathi, Ghandehari and Shirangi (2014), Wahab and Ramli (2014), Alani and Alamri (2015) and Acaravci (2015) and Kajola (2015).

However, some writers have tested the pecking order theory and find results inconsistent with the theory. Some of these are Frank and Goyal (2004), Buferna et al (2005) and Frank and Goyal (2007).

## 3. METHODOLOGY

### 3.1 Data Source

Data for the study were gathered mainly from the secondary source (published annual financial statements of the selected firms).

### 3.2 Population and Sample

The population of this study consists of 214 listed companies in the Nigerian Stock Exchange (NSE) as at the end of 2012. However, due to some reasons (for example, non availability of complete data set of some firms as a result of closure of operations during the period of study), it was difficult to make use of the entire population in the course of this study, hence, the use of sample. The sample of firms chosen for this study was drawn from the list of quoted firms on the NSE as at the beginning of 2006. Firms selected were representatives of Nigeria firms because they covered the entire non-financial sectors. Financial, insurance and pension management firms were not included due to their specific behaviour and nature (their leverages are being strongly influenced by

various regulatory institutions).

After trimming, the sample consists of 245 – firm year observations for 35 firms over the 2006-2012 periods. The sample period, although is judgmental, is considered sufficient enough to be used for this type of study.

### 3.3 Validity and Reliability of Data

Data for this study were obtained from published annual reports of sampled firms prepared to meet the requirements of the Nigerian Companies and Allied Matters Act 2004 (as amended), Nigerian Stock Exchange and Securities and Exchange Commission. These published financial reports were also audited by professional external audit firms and are thus reliable and valid.

### 3.4 Data Analysis Instrument

The method of analysis used was multiple regressions. Pooled Ordinary Least Squares (OLS) was used to estimate the coefficients of the explanatory variables. This is in accordance with the position of Barclay and Smith (1995), Rajan and Zingales (1995) and Bevan and Danbolt (2002). Furthermore, in the works of Sogorb-Mira and Lopez-Gracia (2003), Frank and Goyal (2004), Chen (2004), Hovakimian (2004), Abor (2008) and Akinlo (2011), OLS was used. This was found appropriate for a functional relationship where we have dependent and explanatory variables.

### 3.5 Variable Description

The selection of variables in this study follows Harris and Raviv's (1991) and Rajan and Zingales' (1995) analysis of capital structure determinants. The variables are:

(a) *Leverage*: This is the only dependent variable. It is measured as a ratio of debt to debt plus equity. However, three measures were obtained by decomposing total leverage into long-term leverage and short-term leverage. The three variants of leverage used are as follows:

$$LEV_1 = TLR = \frac{\text{Total Debt}}{\text{Total Debt} + \text{Total Equity}} \quad (3.1a)$$

$$LEV_2 = LTLR = \frac{\text{Long-Term Debt}}{\text{Total Debt} + \text{Total Equity}} \quad (3.1b)$$

$$LEV_3 = STLR = \frac{\text{Short-Term Debt}}{\text{Total Debt} + \text{Total Equity}} \quad (3.1c)$$

(b) *Profitability (PROF)*: This is defined as the ratio of earnings before tax to total assets. Wald (1999) posits that profitability is the single largest determinant of debt in the USA. The expected signal of this variable depends on the capital structure theory that is adopted. Static Trade Off predicts a positive signal because the higher the firm's profitability, the higher the potential tax shields and therefore the higher the debt level. The Pecking Order, on the other hand, predicts a negative relationship between leverage and profitability. Empirically, Huang and Song (2005), Salawu (2007), Miglo (2007), Abor (2008), Kalu (2009), Afza and Hussain (2011), Dawood et al (2011), Wahab, Amin, and Yusop (2012), Yolanda and Soekarno (2012), Tomak (2013), Wahab and Ramli (2014), Acaravci (2015), Alani and Alamri (2015) and Kajola (2015) observed negative relationship between profitability and leverage in their studies.

(c) *Asset Tangibility (TANG)*: This is defined as the ratio of firm's non-current asset (fixed assets) to total asset. Asset tangibility is considered as a proxy for collaterals. Wedig, Sloan, Asan and Morrisey (1988) submit that debt may be more readily used if there are durable assets to serve as collateral. Following the predictions of both Static Trade Off and Pecking Order, we expect a positive signal from this variable. On the other hand, Agency theory predicts a negative relationship between asset tangibility and leverage ratio. Empirically, Akhtar and Oliver (2009), Khrawish and Khraiwesh (2010), Ebadi, Thim, and Choong, (2011), Zabri (2012), Wahab et al (2012), Paligorova and Xu (2012), Wahab and Ramli (2014) and Alani and Alamri (2015) showed a positive relationship. However, in the studies of Levent and Ersan (2012), Mahvish and Qaisar (2012), Abdeljawad et al (2013), Haron (2014) and Acaravci (2015), a negative relationship between asset tangibility and leverage was reported.

(d) *Growth opportunities (GOP)*: Um (2001) argues that growing companies' funding pressure for investment opportunities is likely to exceed their retained earnings and according to the Pecking Order, are likely to choose debt rather than equity. Pecking Order expects a negative relationship between leverage and this variable. Furthermore, the Static Trade Off predicts that firms with more investment opportunities have less leverage because they have stronger incentives to avoid underinvestment and asset substitution that can arise from stockholder-bondholder agency conflicts. Rajan and Zingales (1995) confirmed this theoretical expectation. However, some studies (see Fatouh, Harris and Scaramozzino, 2002 and Schargrotsky, 2002), reported a positive relationship between growth opportunities and leverage. Change in log of total assets is used to proxy for growth opportunities.

(e) *Size (SIZ)*: This is defined as natural log of total assets. Bevan and Danbolt (2002), in support of the Static Trade Off theory, argue that large firms tend to hold more debt, because they are regarded as being "too big to fail" and therefore receive better access to the capital market. Abor (2008) posits that lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency cost associated with debt. Therefore, larger firms will have higher debts. Static Trade Off theory expects a positive signal from this variable. Some empirical studies such as Sheikh and Wang (2010), Khrawish and Khraiweh (2010), Dawood et al (2011), Akinlo (2011), Al-Quidah (2011), Levent and Ersan (2012), Kumar, Dhanasekaran, Sandhya, and Saravanan (2012), Mahvish and Qaisar (2012), Maxwell and Kehinde (2012), Tomak (2013), Wahab and Ramli (2014) and Abdeljawad et al (2014) supported a positive relationship. Contrary to theoretical expectation, some studies also reported a negative relationship between firm size and leverage. Some of these studies included Chen (2004), Ezeoha (2008), Yolanda and Soekarno (2012) and Wahab and Ramli (2014).

(f) *Non- debt tax shields (NDTS)*: The ratio of depreciation to total assets is used to measure this variable. The Static Trade Off predicts that a major motivation for issuing debt instead of equity is to save corporate tax. However, firms can use non-debt tax shields such as depreciation to reduce corporate tax. Thus, a higher non-debt tax shield reduces the potential tax benefit of debt and hence, it predicts a negative relationship between non-debt tax shield and leverage. Empirically, Wiwattanakantang (1999), De Miguel and Pindado (2001), Schargrotsky (2002), and Zabri (2012) reported a negative relationship. On the other hand Moore (1986) as cited in Acaracvi (2015) argue that substantial non-debt tax shield can act as attractive collateral and so it can induce high debt levels. In this case, a positive relationship between non-debt tax shields and leverage is expected. This is empirically supported by Ramlall (2009).

(g) *Dividend payout (DIV)*: The ratio of dividend paid by a firm to its profit after tax is used to determine this variable. The expected signal of this variable depends on the capital structure theory that is adopted. Static Trade Off predicts a negative relation by asserting that low dividend payout ratio means increase in the equity base, thus reducing leverage. The Pecking Order theory, however, submits that the relationship between dividend payout ratio and debt level is positive. It argues that management of a firm prefers the internal financing to external one. Thus, instead of distributing the high dividend and meeting the financial need from debt capital, management retains the earnings. The lower dividend payout ratio means the lower level of debt in capital structure.

### 3.6 Model Specification

Panel data methodology was employed for this study as a result of the panel character of the data. This method simultaneously combined cross-section and time series data. Specifically, the model for the estimation of the determinants of capital structure and test of the Static Trade Off and Pecking Order theories based on the discussion in the literature review can be written as follows:

$$Lit = \beta_0 + \beta_1 PROF + \beta_2 SIZ + \beta_3 TANG + \beta_4 NDTS + \beta_5 GOP + \beta_6 DIV + e_{it} \quad (3.2)$$

It should be noted that the Lit is decomposed into three proxies (models) - TLR (Model 1), LTLR (Model 2) and STLR (Model 3).

## 4. DATA ANALYSIS AND INTERPRETATION

### 4.1 Descriptive statistics

Table 1 presents a summary of the descriptive statistics of the three dependent variables- Total Leverage Ratio (TLR), Long- Term Leverage Ratio (LTLR) and Short- Term Leverage Ratio (STLR) and the 6-firm specific factors (explanatory variables). The average Total Leverage Ratio of the firm was 0.268 out of which the Long-Term Leverage Ratio (LTLR) accounted for a mere 0.049 and the Short- Term Leverage Ratio (STLR) was 0.219. This shows that the firms preferred the use of short-term debt to long-term debt. This is in line with what

obtains in other developing and emerging economies. This is probably because of the ‘infant’ nature of their capital markets, which ordinarily should be the source of long- term debts. As reported by Claessens, Djankov and Lang (1998), Pandey (2002) and Akinlo (2011) firms in the developed countries, because of the well developed capital market, prefer the use of long-term capital to short-term capital.

The average profitability (PROF) of the firms was 0.112, suggesting that for every N100 asset, only N11.20 could only be attributable to profit. Firm’s size (SIZE) has a mean value of 9.548, while the figure for asset tangibility was 0.419. This indicates that, on the average, non-current assets accounted for about 41.2% of the total assets, while larger chunk, 59.8% was made up of current assets. Since, the sampled firms made use of mostly short-term funds in financing their projects, the higher short-term assets indicate efficient use of the matching principle (short- term fund to finance short-term project). The equivalent value for the non debt tax shield (NDTS) was 0.044. The average growth opportunity of the sampled firms was 0.060. The average dividend pay- out ratio (DIV) was about 30.4% during the period of study. The Table also revealed that firm size, dividend pay-out and asset tangibility, with standard deviation of 1.028; 0.992 and 0.675 respectively were the three most volatile (least stable) variables.

**Table 1: Summary of descriptive statistics**

	Mean	Std Deviation	Minimum	Maximum	Kurtosis	Skewness
TLR	0.268	0.252	0.000	0.911	-0.843	0.582
LTLR	0.049	0.119	0.000	0.733	12.493	3.311
STLR	0.219	0.231	0.000	0.834	-0.350	0.866
PROF	0.112	0.093	-0.187	0.491	1.534	0.198
SIZE	9.548	1.028	0.133	11.141	27.303	-3.140
TANG	0.419	0.675	0.007	10.440	201.573	13.546
NDTS	0.044	0.039	0.001	0.536	105.651	8.663
GO	0.060	0.120	-0.875	0.725	19.620	-0.821
DIV	0.304	0.992	-8.450	11.371	87.646	2.871

Source: Researchers’ analysis (2015) with the aid of E-views version 7.0

Table 2 reveals a negative association between TLR and profitability at 5% level. It also shows a positive association with firm size at 5% level. It however reveals insignificant association with other four explanatory variables (NDTS, TANG, DIV and GOP).

The Table 2 further shows a negative relation between LTLR and PROF at 10% level and positive relationship with firm size at 5% but insignificant association with other four explanatory variables as in TLR above.

**Table 2: Correlation matrix among variables**

	TLR	LTLR	STLR	PROF	SIZE	TANG	NDTS	GO	DIV
Pearson corr- TLR	1.000								
LTLR	0.406*** (0.000)	1.000							
STLR	0.883*** (0.000)	-0.070 (0.273)	1.000						
PROF	-0.138** (0.030)	-0.108* (0.093)	-0.196** (0.035)	1.000					
SIZE	0.130** (0.042)	0.135** (0.035)	0.072 (0.259)	0.225*** (0.000)	1.000				
TANG	-0.054 (0.400)	0.051 (0.425)	-0.085 (0.184)	-0.141** (0.028)	-0.536*** (0.000)	1.000			
NDTS	-0.023 (0.715)	-0.058 (0.363)	0.004 (0.946)	-0.020 (0.754)	-0.075 (0.242)	0.288*** (0.000)	1.000		
GO	-0.009 (0.891)	0.019 (0.891)	-0.020 (0.761)	0.114* (0.075)	0.064 (0.317)	-0.025 (0.692)	-0.137** (0.032)	1.000	
DIV	0.074 (0.249)	-0.025 (0.699)	0.093 (0.145)	0.170*** (0.008)	0.101 (0.114)	-0.033 (0.606)	0.053 (0.413)	0.145** (0.023)	1.000

The p- values are in parentheses.

Source: Researchers' analysis (2015) with the aid of E-views version 7.0

A negative association between STLR and profitability is revealed at 5% level. It is however insignificant with other five variables.

#### 4.2 Regression Results and Discussion

In order to be sure that correct inferences are made from our analysis, we test for the existence of multicollinearity between the explanatory variables using correlation coefficient test and Variance Inflation Factor (VIF). Gujarati (2003) and Rumsey (2007) submit that correlation coefficient value of 0.8 and above for an explanatory variable indicate existence of high multicollinearity problem between it and another explanatory variable. Furthermore, Gujarati (2007) argues that VIF of any explanatory variable above 10 shows high multicollinearity problem between it and the other explanatory variable.

In Table 2, there is no explanatory variable with coefficient value of 0.8 and above. Furthermore, in Table 3, none of the explanatory variables has VIF of above 10. This indicates that there is no problem of high multicollinearity between the explanatory variables. The F-statistic values as shown in Table 4 are significant at 5% level for each of the three capital structure proxies (models). It indicates that the model as a whole is fit. The Durbin Watson values also indicated little or no autocorrelation among the variables.

**Table 3: VIF of the explanatory variables**

Variable	VIF
PROF	1.087
SIZE	1.472
TANG	1.541
NDTS	1.131
GO	1.056
DIV	1.058

Source: Researchers' analysis (2015) with the aid of E-views version 7.0

Table 4 reports the regression model results of the three variants of leverage and the six firm-specific determinant factors. We used the pooled Ordinary Least Squares (OLS) to determine the coefficient of the variables. The pooled OLS results indicate a negative and significant relationship between the three variants of Leverage measurement and profitability. In model 1 (TLR) it was significant at 1% and for models 2 (LTLR) and 3 (STLR), were significant at 5%. These results confirm that the sampled firms relied extensively on the least costly source of funding (retained earnings) before opting for riskier external funding when they had viable projects to be implemented. Previous empirical studies such as, Myers (1984), Booth et al (2001), Bevan and Danbolt (2002), Cassar and Holmes (2003), Hall et al (2004), Bural (2004), Chen (2004), Abor and Biekpe (2005), Dragota and Semenescu (2006), Salawu (2007), Abor (2008), Kalu (2009), Metan, Yahyadefar and Cheshmi (2009), Abdeljawad, et al (2013), Haron (2014), Fathi, Ghandehari and Shirangi (2014), Wahab and Ramli (2014), Alani and Alamri (2015) and Acaravci (2015) and Kajola (2015) also confirmed this negative relationship. Salawu (2007) posits that the negative relationship can be attributed to the under developed bonds market in the Nigerian Stock Exchange. The result is consistent with the prediction of the Pecking Order theory. It also confirms the importance of profitability as a determinant of corporate capital structure in Nigeria.

The regression results show a positive and significant relationship between leverage and firm's size in models 1 (TLR) and 2 (LTLR) at 1% and 5% levels respectively. The result can be interpreted as suggesting that larger firms can better support higher debt ratios than smaller firms and the thought of 'too big to fail' (Bevan & Danbolt, 2002; Wiwattanakantang 1999; Al-Sakran 2001; Pandey 2002; Cassar and Holmes 2003; Baral 2004; Abor and Biekpe 2005; Huang and Song 2006; Dragota and Semenescu 2006; Salawu 2007; Salawu and Agboola 2008), Maxwell and Kehinde (2012), Tomak (2013), Wahab and Ramli (2014), Abdeljawad et al (2014) and Kajola (2015). This is consistent with the prediction of the Static Trade Off theory. However, model 3 indicates an insignificant relationship between STLR and firm's size. The results of models 1 and 2 confirm that size is an important determinant of corporate capital structure in Nigeria during the period of study.

**Table 4: Regression results**

	Model 1	Model 2	Model 3
	TLR	LTLR	STLR
Constant	-0.461 (0.645)	-2.690*** (0.008)	0.860 (0.391)
PROF	-2.876*** (0.004)	-2.144** (0.033)	-2.024** (0.044)
SIZE	2.283** (0.023)	3.546*** (0.000)	0.676 (0.500)
TANG	0.304 (0.762)	2.618*** (0.009)	-0.993 (0.322)
NDTS	-0.418 (0.677)	-1.455 (0.147)	0.283 (0.777)
GO	-0.234 (0.815)	0.194 (0.847)	0.350 (0.727)
DIV	1.432 (0.154)	-0.285 (0.776)	1.690 (0.092)
Adjusted R Square	0.31	0.45	0.30
F- Statistics	2.316** (0.034)	2.901** (0.010)	2.405** (0.021)
Durbin Watson	1.852	1.847	1.866
Observation	245	245	245

The p- values are in parentheses.

\*, \*\*, \*\*\* indicate significant at 10%, 5% and 1% respectively.

Source: Researchers' analysis (2015) with the aid of E-views version 7.0

The regression result in Table 4 shows a positive and significant relationship between leverage and asset tangibility at 1% in model 2 (LTLR). The positive relationship is what is commonly found in the literature as in Abdeljawad et al (2013), Haron (2014), Wahab and Ramli (2014), Alani and Alamri (2015) and Kajola (2015) and provides evidence in support of the predictions of Static Trade Off and Pecking Order theories. According to Harris and Raviv (1991) and Akintoye (2008), the degree to which the firm's assets are tangible should result in the firm having greater liquidation value. The outcome of this study provides evidence in support of asset tangibility as an important determinant factor of corporate capital structure.



The results of the three variants of leverage measurement to the non-debt tax shield; growth opportunities and dividend pay-out, are not significant. We cannot rely on these factors as important determinants of corporate capital structure in Nigeria.

## 5. CONCLUSION AND RECOMMENDATIONS

This paper examined the determinants of corporate capital structure of thirty-five (35) Nigerian non-financial listed firms for the seven-year period 2006-2012. Panel data methodology was employed and the method of estimation was pooled OLS. The dependent variable, Leverage ratio, was decomposed into three variants- Total Leverage Ratio (TLR), Long-Term Leverage Ratio (LTLR) and Short-Term Leverage Ratio (LTLR). This was done so as to show the importance firms in Nigeria attach to short-term debt as a financing source and to also discriminate between Static Trade Off and the Pecking Order theories of capital structure.

Six firm-specific determinant factors- profitability; size; tangibility; non-debt tax shields; growth opportunities and dividend-payout were investigated. The study made important methodological contribution in terms of the period of study (7 years), sampled size (35) and the inclusion of two variables- non-debt tax shields and dividend pay-out as determinant factors. In the extant empirical literature of the developing/emerging economy, these two firm-specific factors were not adequately taken care of.

Results suggest that profitability, size, and asset tangibility are important determinants of corporate capital structure of the sampled firms in the period under study. In many situations, it provides evidence in support of the Pecking Order Theory. The study could not, however, provide support for the importance of non-debt tax shield; growth opportunities and dividend pay-out as firm-specific determinant factors. This could be due to the fact that Nigerian economy is still developing and yet to get to a threshold for meaningful effects of these variables.

The results from the study also confirm the importance attach to short-term source of financing by Nigerian firms and leading credence to the underdeveloped nature of the capital market. Out of 26.8% of the total leverage ratio, 21.9% was attributed to the short-term leverage ratio; while a mere 4.9% was long-term leverage ratio. The implication of this is that the financial stability of the firms and the country's economy at large will be affected in line with the distortion in the money market. This situation will manifest in high financial risk thereby affecting resource efficiency. Firms that rely on short-term borrowing (although cheaper and easier to obtain than long-term debt in Nigeria) will face higher risk in terms of payment of exorbitant interest rates, especially during the period of financial crisis. If that happens, most firms will not be able to repay their debts as at when due and might lead to the death of such firms.

The present study did not provide empirical support for the Modigliani and Miller proposition of 1958 (financing mode does not matter). In Nigeria, as a result of some market imperfections, financing mode matters a lot.

Evolving from the study, it is recommended that managers of firms should be cautious when seeking loan advances from the money market. This is more important when considering the appropriate capital mix that optimize firm value. A wrong mix may significantly raise their level of operational and financial risks. The regulators of the money and capital markets should improve in their efforts toward the development of the capital market; especially the bond sector of the Nigerian Stock Exchange. It is through this that firms can source truly long term funds that significantly reduces cost of funds, create opportunities for firms to take advantage of expanding markets and improve firm value.

Lastly, efforts should be directed in the future to improve this work by considering the following areas:

- (i) Longer period of analysis, preferably twenty years and above;
- (ii) Categorizing the firms into business sectors in order to see better the determinants of capital structure of specific sectors; and
- (iii) Study of corporate capital structure of micro, small and medium scale enterprises in Nigeria and other developing countries.

## References

- Abdeljawad, I, Mat-Nor, F, Ibrahim, I and Abdul-Rahim, R (2013). Dynamic capital structure trade-off theory: evidence from Malaysia. *International Review of Business Research Papers*, 9 (6), 102-110.
- Abor, J (2008). Determinants of the capital structure of Ghanaian firms. *AERC Research Paper No.176, African Economic Research Consortium, Nairobi*, 1- 34.
- Abor, J. and Biekpe, N. (2005). What determines the capital structure of listed firms in Ghana? *African Finance Journal*, 7(1), 37-48.

- Acaravci, S.K (2015). The determinants of capital structure: evidence from the Turkish manufacturing sector. *International Journal of Economics and Financial Issues*, 5(1), 158-171.
- Akhtar, S & Oliver, B (2009). Determinants of capital structure for Japanese multinational and domestic corporations. *International Review of Finance*, 9, 1-26.
- Akinlo, O (2011). Determinants of capital structure: evidence from Nigerian panel data. *African Economic and Business Review*, 9 (1), 1-16.
- Akintoye, I.R (2008). Effects of capital structure on firms' performance: the Nigerian experience. *European Journal of Economics, Finance and Administrative Sciences*, 10, 233-243.
- Alani, M.K & Alamri, M.S (2015). The determinants of capital structure: an empirical study of Omani listed industrial companies. *Business: Theory and Practice*. 16(2), 159-167.
- Al-Sakran, S. A. (2001). Leverage determinants in the absence of corporate tax system: the case of non-financial publicly traded corporations in Saudi Arabia. *Managerial Finance*, 27(10/11), 58-86.
- Antoniou, A., Guney, Y. and Pandyal, K. (2002). Determinants of corporate capital structure: evidence from European countries. Working Paper, University of Durham.
- Ariyo, A (1999). Appropriateness of development financing mix of sub-Saharan African Economies: evidence from Nigeria. *Nigerian Journal of Economics and Social Studies*, 41(1), 159- 173.
- Auerbach, A.S. (1985) Real determinants of corporate leverage, in Friedman B.M. (ed), *Corporate Capital Structure in the United States*, Chicago, University of Chicago Press.
- Baral, K. J (2004). Determinants of capital structure: a case study of listed companies of Nepal. *The Journal of Nepalese Business Studies*, 1(1), 1- 13.
- Barton, S. L., Hill, N.C. and Sundaram, S. (1989). An empirical test of stakeholder theory predictions of capital structure. *Financial Management*, 18, 36- 44.
- Beattie, V, Goodacre, A and Thomson, S (2006). Corporate financing decisions: UK survey evidence. *Journal of Business Finance and Accounting*, 33 (9), 1402-1434.
- Beven, A. and Danbolt, J. (2000). Dynamics in the determinants of capital structure in the UK. Working Paper, University of Glasgow.
- Beven, A and Danbolt, J. (2002). Capital structure and its determinants in the use of a decompositional analysis. *Applied Financial Economics*, 12, 159-170.
- Bharath, S. T, Pasquariello, P and Wu, Guojun (2006). Does asymmetric information drive capital structure decisions? Working Paper, University of Michigan and University of Houston.
- Booth, L, Aivazian V., Demircug-Kunt, A. and Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance*, LVI 87-130.
- Buferna F. Bangassa K. and Hodgkinson L. (2005). Determinants of capital structure: evidence from Libya. Research Paper Series, University of Liverpool.
- Cassar, G. and Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. *Journal of Accounting and Finance*, 43, 123-147.
- Chaplinsky, S and Niehaus, G (1990). The determinants of inside ownership and leverage. Working Paper, University of Michigan.
- Chen, J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business Research*, 57, 1341-1351.
- Chen, L and Zhao, X (2005). Firm financing decisions. Working Paper, Michigan State University and Kent State University.

Chung, K. H (1993). Asset characteristics and corporate debt policy: an empirical test. *Journal of Business Finance and Accounting*, 20, 83- 98.

Claessens, S, Djankov, S and Lang, L (1998). East Asian corporate growth financing and risk over the last decade. World Bank Policy Research Paper, World Bank, Washington DC, 1-23.

Dawood, M.H.A.K, Moustafa, E.I and El-Hennawi, M.S (2011). The determinants of capital structure in listed Egyptian corporations. *Middle Eastern Finance and Economics*, 9, 83-99.

Deesomak, R, Paudyal, K and Pescetto, G (2004). The determinants of capital structure: evidence from the Asian-Pacific region. *Journal of Multinational Financial Management*, 14 (4-5), 387- 405.

De Miguel, A & Pindado, J (2001). Determinants of capital structure: new evidence from Spanish panel data. *Journal of Corporate Finance*, 7, 77-99.

Dragota, M (2006). Decizia de investire pe piata de capital. Editura ASE, Bucuresti.

Dragota, M and Semenescu, A (2006). A dynamic analysis of capital structure determinants: empirical results for Romanian capital market. *Journal of Theoretical and Applied Economics*, (Unknown volume), 65- 80.

Ebadi, M, Thim, C.K & Choong, Y. V (2011). Impact of firm characteristics on capital structure of Iranian listed firms. *European Journal of Economics, Finance and Administrative Sciences*. 42, 160- 171.

E-Views 7.0. User's Guide. Quantitative Micro Software, USA.

Ezeoha, A.E (2008). Firm size and corporate financial leverage choice in a developing economy. *The Journal of Risk Finance*, 9(4), 351-364.

Fathi, S, Ghandehari, F and Shirangi, S.Y (2014). Comparative study of capital structure determinants in selected stock exchanges of developing countries and Tehran Stock Exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4 (1), 67-75.

Fattouh, B, Harris, L & Scaramozzino, P (2002). Capital structure in South Korea: a quantile regression approach. *Royal Economic Society Annual Conference*, 70, 1-34.

Flannery, M. J and Rangan, K. P (2004). Partial adjustment toward target capital structure. Draft Paper, 1- 49.

Frank, M.Z and Goyal, V. K. (2007). Corporate leverage: how much do managers really matter? Working Paper, University of Minnesota and HKUST.

Frank, M.Z and Goyal, V. K. (2004). Capital structure decisions: which factors are reliably important? Working Paper Series, UBC and HKUST.

Gaud, P, Hoesli, M and Bender, A (2004). Further evidence on debt-equity choice. FAME- Research Paper No.114, University of Geneva, 1-32.

Givoly, D, Hayn, C, Ofer, A. R and Sarig, O (1992). Taxes and capital structure: evidence from firms' response to the Tax Act of 1986. *Review of Financial Studies*, 5, 331- 355.

Gujarati, D.N (2003). *Basic Econometrics*. New York, McGraw-Hill/Irwin.

Hall, G, Hutchinson, P and Michaelas, N. (2004). Determinants of the capital structures of European SMEs. *Journal of Business Finance and Accounting*, 31, 711-728.

Haron, R (2014). Key factors influencing target capital structure of property firms in Malaysia. *Asian Social Science*, 10 (3), 62-69.

Harris, M and Raviv, A (1991). The theory of capital structure. *Journal of Finance*, 46, 297-356.

Hovakimian, A (2004). The role of target leverage in security issues and repurchases. *Journal of Business*, 77

- Huang, H and Song, F.M (2006). The determinants of capital structure: evidence from China. *China Economic Review*, 17, 14-36.
- Iwarere, H.T and Akinleye, G.T (2010). Capital structure determinants in the Nigerian banking industry: financial managers' perspectives. *Pakistan Journal of Social Sciences*, 7 (3), 205-213.
- Jalilvand, A and Harris, R. S (1984). Corporate behaviour in adjusting to capital structure and dividend targets: an econometric study. *Journal of Finance*, 39, 127-145.
- Kajola, S.O (2015). Determinants of capital structure of Nigerian quoted companies. Unpublished PhD Thesis, Ladoke Akintola University of Technology, Ogbomoso, Nigeria.
- Kajola, S.O (2007). Testing static trade off against pecking order models of capital structure in Nigerian listed firms. *West African Journal of Management and Liberal Studies*, 2(1), 176-195.
- Kajola, S.O, Okewale, J. A and Desu, A. A (2008). Does pecking order model of capital structure explain the financing behaviour of Nigerian listed firms? A paper delivered at a seminar organized by the Faculty of Management Sciences, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.
- Kalu, O (2009). Corporate capital structure determinants: evidence from five African countries. *African Finance Journal*, 11(1), 1-23.
- Khrawish, H.A & Khraiwesh, A.H.A (2010). The determinants of the capital structure: evidence from Jordanian industrial companies. *Journal of King Abdul –Aziz University Economic and Administration*, 24(1), 173-196.
- Kumar, M.A.S, Dhanasekaran, M, Sandhya, S & Saravanan, R (2012). Determination of financial capital structure on the insurance sector firms in India. *European Journal of Social Sciences*, 29(2), 288- 294.
- Levent, C & Ersan, E (2012). The determinants of corporate debt ratio: an empirical analysis on Turkish corporations. *International Research Journal of Finance and Economics*, 95, 151- 162.
- Long, M. and Matitz, H. (1985). Investment patterns and financial leverage, in Friedman B. (ed), *Capital structure in the United States*, Chicago: University of Chicago Press.
- Mahvish, S & Qaisar, A.M (2012). Determinants of capital structure- a study of oil and gas sector of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(10), 395- 400.
- Marsh, P (1982). The choice between equity and debt: an empirical study. *Journal of Finance*, 37, 121-144.
- Maxwell, O.O & Kehinde, E.E (2012). Determinants of corporate capital structure in Nigeria. *International Journal of Economics and Management Sciences*, 1(10), 81-96.
- Metan, M, Yahyadefar, M and Cheshmi, A (2009). The impact of firm characteristics on capital structure in listed firms of Tehran Stock Exchange. *Management Researcher*, 7 (4), 42-52.
- Modigliani F. and Miller, M. (1958). The cost of capital, corporate finance and the theory of investment. *American Economic Review*, June, 48(4), 261-297.
- Modigliani F. and Miller, M. (1963). Corporate income taxes and the cost of capital- a correction. *American Economic Review*, 53(3), 433-443.
- Myers S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39, 575-592.
- Myers S. C and Majluf N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13, 187-221.
- Nigerian Stock Exchange (2006-2012). *Fact Book*, Lagos.:
- Opler, T. C and Titman, S (1994). The debt-equity choice: an analysis of issuing firms. Unpublished Working Paper Boston College, Boston, MA.

Oyejide, T. A (1987). The impact of equity capital, retained earnings and debt on corporate profits in Nigeria. *Nigerian Journal of Economics and Social Studies*, 29(1).

Paligorova, T., Xu, Z. (2012). Complex ownership and capital structure. *Journal of Corporate Finance*, 18(4), 701-716.

Pandey, I. M. (2002). Capital structure and the firm characteristics: evidence from an emerging market. Working Paper, Indian Institute of Management, Phinedabad.

Pandey, I. M. (2003). *Financial Management*, 8<sup>th</sup> Edition, New Delhi, Vikers Publishing House PVT Ltd.

Rajan, R. G and Zingales, L. (1995). What do we know about capital structure? Some evidence from international Data. *Journal of Finance*, 50 (5) December, 1421-1460.

Ramlall, I (2009). Determinants of capital structure among non-quoted Mauritian firms under specificity of leverage: looking for a modified pecking order theory. *International Research Journal of Finance and Economics*, 31, 83-92.

Rumsey, D (2007). *Intermediate Statistics for Dummies*. Indianapolis, Wiley Publishing Inc.

Salami, A (2000). How are Nigerian companies funded? *Centre for Research in Economics and Finance*, Discussion Paper Series No. 1, Lagos Business School, Nigeria.

Salawu, R. O (2007). An empirical analysis of the capital structure of selected quoted companies in Nigeria. *International Journal of Applied Economics and Finance*, 1, 16-28.

Salawu, R. O and Agboola, A. A (2008). The determinants of capital structure of large non-financial listed firms in Nigeria. *International Journal of Business and Finance Research*, 2(2), 75-84.

Sbeiti, W (2010). The determinants of capital structure: evidence from the GCC countries. *International Research Journal of Finance and Economics*, 47, 54-78.

Schargrotsky, E (2002). The effect of product market competition on capital structure: empirical evidence from the newspaper industry. Universidad Torcuato Di Tella, [www.utdt.edu/-escharge/RevisionDeptFebruary22\\_2002.PDF](http://www.utdt.edu/-escharge/RevisionDeptFebruary22_2002.PDF), 1-32.

Schwartz E. and Aronson, R (1967). Some surrogate evidence in support of the concept of optimal financial structure. *Journal of Finance*, 22, 10-18.

Sogorb-Mira, F and Lopez-Gracia, J (2003). Pecking order versus trade off: an empirical approach to the small and medium enterprise capital structure. IVIE Working Paper Series, June Edition, 1-36.

Soyibo, A (1996). Determinants of choice of investment finance by Nigerian firms. *African Journal of Economic Policy*, 3 (1).

Soyode, A (1978). Financing industrial growth in Nigeria: a study of the place of debt and retained earnings. *Journal of Management, Ghana*, 10 (1), 26- 31.

Titman, S and Wessels R (1988). The determinants of capital structure choice. *Journal of Finance*, 43 (1), March, 1-19.

Tomak, S (2013). The impact of overconfidence on capital structure in Turkey. *International Journal of Economics and Financial Issues*, 3(2), 512-518.

Um, T (2001). Determination of capital structure and prediction of bankruptcy in Korea. Unpublished PhD Thesis, Cornell University.

Wahab, R.A, Amin, M.S.M & Yusop, K (2012). Determinants of capital structure of Malaysian property developers. *Middle-East Journal of Scientific Research*, 11(8), 1013-1021.

Wahab, S.N.A & Ramli, N.A (2014). The determinants of capital structure: an empirical investigation of Malaysian listed government linked companies. *International Journal of Economics and Financial Issues*, 4(4), 930-945.

Wald, J.K (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial Research*, Summer 22 (2), 161-187.

Wedig, G, Sloan, F. A, Assan, M and Morrissey, M. A (1988). Capital structure, ownership and capital payment policy: the case of hospitals. *Journal of Finance*, 43, 21-40.

Wiwattanakantang, Y. (1999). An empirical study on the determinants of the capital structure of Thai firms. *Pacific-Basic Finance Journal* 7, 371-403.

Yolanda, K & Soekarno, S (2012). Capital structure determinants of Indonesian plantation firms: empirical study on Indonesian Stock Exchange. Being a paper delivered at 2<sup>nd</sup> International Conference on Business, Economics, Management and Behavioural Science.

Zabri, S.M (2012). The determinants of capital structure among SMEs in Malaysia. Being a paper delivered at International Conference of Technology Management, Business and Entrepreneurship.

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