Capital Structure and Firm Value: Empirical Evidence from Nigeria

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Abstract

This study seeks to provide evidence on the impact of capital structure on a firm's value. The analysis was implemented on a sample of 124 companies quoted on the Nigerian Stock Exchange (NSE) for the year ended 31st December 2007. The ordinary least squares method of regression was employed in carrying out this analysis. The result of the study reveals that in an emerging economy like Nigeria, equity capital as a component of capital structure is irrelevant to the value of a firm, while Long-term-debt was found to be the major determinant of a firm's value. Following from the findings of this study, corporate financial decision makers are advised to employ more of long-term-debt than equity capital in financing their operations since it results in a positive firm value.

Introduction

The Modigliani and Miller theory, proposed by Modigliani and Miller (1958 and 1963), forms the basis for modern thinking on capital structure. In their seminal article, Modigliani and Miller (1958 and 1963) demonstrate that, in a frictionless world, financial leverage is unrelated to firm value, but in a world with tax-deductible interest payments, firm value and capital structure are positively related. Miller (1977), added personal taxes to the analysis and demonstrates that optimal debt usage occurs on a macro level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. In addition, Modigliani and Miller (1963) made two propositions under a perfect capital market condition. Their first proposition is that the value of a firm is independent of its capital structure. Their second proposition state that the cost of equity for a leverage firm is equal to the cost of equity for an unleverage firm plus an added premium for financial risk.

However, other theories such as the trade –off theory (Myers,1984), pecking order theory (Myers and Majluf,1984) and agency cost theory (Jensen and Meckling, 1976) argue that if capital structure decision is irrelevant in a perfect market, then, imperfection which exist in the real world may be adduce for its relevance. Such imperfections include bankruptcy costs (Baxter, 1967, Kraus and Litzenberger, 1982; and Kim, 1998), agency cost (Jensen and Meckling, 1976), gains from leverage-induced tax shields (De Angelo and Masulis, 1980) and information asymmetry (Myers, 1984). Taking it turn from the above, Pandey (2004) states that the capital structure decision of a firm influences its shareholders return and risk. Consequently, the market value of its shares may be affected by the capital structure decision. The objective of a firm should therefore be directed towards the maximization of its value by examining its capital structure or financial leverage decision from the point of view of its impact on the firm value. Following from this, the objective of this study therefore is; to find out whether the amount of equity used in a firm affect its market value and also to find out whether the amount of debt used in a firm affect its market value. The question now is, does the capital structure decision of the firm affect its value? In this research work, effort will be made to provide answer to this question and others.

Literature review

The relationship between capital structure and firm value has been the subject of considerable debate, both theoretically and in empirical research. Through out the literature, debates have focused on whether there is an optimum capital structure for an individual Firm or whether the proportion or level of debt usage is irrelevant or relevant to the Firm's value (Hatfield, Cheng and Davidson, 1994). Pandey (2004) opines that, the capital structure decision of a firm should be examined from the point of its impact on the value of the firm. He further states that if capital structure decision can affect a firm's value, then firms would like to have a capital structure which maximizes their value. The aim of a firm should centre therefore on the maximization of its value through capital structure decisions. However, there exist conflicting theories on the relationship between capital structure and firm's value that it becomes necessary to capture them into some broad groups.

Harris and Raviv (1991) for example, organized their survey of literature around the driving forces behind financial policy and capital structure. They produce a classification based on taxes, bankruptcy cost, agency cost, information asymmetry, interaction with input/or product and corporate control considerations. Sanders (1998) adopted a different approach and classified capital structure theories base on whether particular theory presumes the existence of optimal financial policy and how the theory describes it. According to his classification, there are theories in support of the existence of an optimal debt-equity mix (that is, the trade-off theory), the existence of optimal financial hierarchy (the pecking order theory) and the Modigliani and Miller irrelevance theory of capital structure in relation to a firm's value. The capital structure in this study means the term used to represent a combination of long-term debt and equity.

Long term debt includes obligations that are not due to be repaid within the next twelve months. Such debt consists mostly of bonds or similar obligations, including a great variety of notes, capital lease obligation and mortgage issues. Generally, debt is money that has been borrowed from another party and must be repaid at an agreed date. The cost of using this money, which also must be paid is interest. The person or firm making the loan is called the creditor or lender and the person or firm borrowing the money is called the debtor or borrower. Business debt may be in the form of commercial loans, terms loans, or bonds. Debt can be used to finance seasonal increases in working capital; permanent increases in working capital, the acquisition of plant, property or equipment; or for merger or acquisition. In addition to the requirement to pay interest, debt may also carry restrictive covenants that the borrower must satisfy to prevent default (Jane, Malonis and Cengage, 2000).

In contrast to equity, debt is not an ownership interest in the firm. Creditors generally do not have voting power. The firm's payment of interest is a fully tax–deductible cost of doing business, unlike dividend payments which are not tax deductible. If it is not repaid, the creditor may legally seize the assets of the firm, which could result in equity liquidation or reorganisation. Thus, a major cost of issuing debt is the possibility of financial distress. (Jane Malonis and Cengage, 2000).

Equity and Firm Value

Equity unlike long-term debt includes paid-up share capital, share-premium, reserves and surplus or retained earnings. Igben (2004) defines paid-up capital as the portion of the called-up capital which has been paid-up by the shareholders. He also describes reserves as amounts set aside out of profits earned by the company, which are not designed to meet any liability, contingency, commitment or diminution in value of assets known to exist at the balance sheet date. Reserves may be voluntarily created by directors or statutorily required by law. Share premium is the excess amount derived from the issue of shares at a price that is above its par value. And lastly, retain earnings are profit plough back in to a company in order to create more resources for operations and invariably increase in the value of the firm. This generates our first hypothesis that there is a positive relationship between equity and firm value.

The relationship between capital structure and firm's value can best be explained by a brief review of the different theories on capital structure. The traditionalist theories believe that capital structure is relevant in determining a firm's value. But the irrelevance theory of Modigliani and Miller (1958), posit that there is no relationship between capital structure and firm's value. However, their position changed when they considered the effect of tax shield and other imperfection in the capital market. They revise their earlier statement and opine that capital structure is very much related to firm's value.

That notwithstanding, Miller (1977), came up with another argument and showed that capital structure is unrelated to firm's value because the tax benefit which is adduced for the relevance of capital structure in relation to firm's value is offset by the fact that shareholders pay more tax than bondholders.

In addition, the pecking order theory of Myers and Majluf (1984), state that there is a correlation between capital structure and firm's value. This is because a firm's value can increase if the right form of capital is used. This theory advocates that firm's value can be affected positively if a capital structure hierarchy is followed. That is, financing with internal fund when available instead of financing with external fund. And when internal fund is completely depleted, debt should be preferred to equity because of the low transaction cost, tax benefits and other advantages attached to it. The trade-off theory also states that there is a relationship between capital structure and firm's value. This is because a firm's value can increase if the proper debt equity mix is used in the firm. This generates the first hypothesis in this study:

> *There is no positive relationship between equity and firm value.*

Long-term Debt and Firm Value

Leland and Toft (1991) state that, the value of a firm is the value of its assets plus the value of tax benefits enjoyed as a result of debt minus the value of bankruptcy cost associated with debt. Modigliani (1980) points out that, the value of a firm is the sum of its debt and equity and this depends only on the income stream generated by its assets. Pandey (2004) opines that the value of a firm is the sum of the values of all its securities. That is, the sum of its equity and debt if it's a leverage firm and the value of only its equity if it is an unleveraged firm. The value of the firm's equity is the discounted value of its shareholders earnings called net income. That is, the net income divided by the equity capitalization rate or expected rate of return on equity. The net income is obtained by subtracting interest on debt from net operating income. On the other hand, the value of debt is the discounted value of interest on debt.

Consistent with agency costs theory, prior literature indicate that debt is value reducing for high growth firms and it is value enhancing for low-growth firms. Jensen (1986) posits that when firms have more internally generated funds than positive net present value projects; debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This over-investment problem can be lessened if managers are forced to pay out excess funds for servicing debt, therefore enhancing the firm's value. Myers (1993) suggests that, a firm with outstanding debt may have the incentive to reject projects that have positive net present value if the benefits from accepting the project accrue to the bondholders without also increasing shareholders' wealth. This under – investment problem can harm the value of firms, especially for the firms with high levels of future investment opportunities. Building on Jensen's (1986) over-investment discussion and Myer's (1993) under-investment discussion, Stulz (1988) argues that debt can have both positive and negative effect on firm value.

Aggarwal and Kyaw (2006) also posit that, debt can have both positive and negative effects on the value of the firm so that the optimal debt structure is determined by balancing the agency costs and other costs of debts as a means of alleviating the under and over-investment problems. Specifically, when firms have surplus cash flows, debt will force managers to pay out funds that might otherwise have been invested in negative net present value projects. However, firms with outstanding debt may have incentives to reject projects that have positive net present value if the benefit from accepting the project accrues to the bondholders without also increasing shareholders' wealth. Therefore, the common message behind the arguments by Jensen (1986), Myers (1993) and Stulz (1988) is that debt can have positive or negative effect on the value of the firm depending on the firm's future investment opportunities.

In addition, McConnell and Servas (1995) posit that, the seeds of under-investment problem lie in the solution of over investment problem. They investigate the relationship between corporate values, leverage and equity ownership of U.S. firms. They discover that for firms with high P/E ratios or for high-growth firms, value is negatively related to leverage and that in firms with low P/E ratio or low-growth firms, value is positively related to leverage. Their evidence supports the contention that for low-growth firms, leverage act as a monitoring mechanism to enhance firm value, whereas for high-growth firms, leverage causes under investment and destroys the value of a firm. This generates the second hypothesis in this study.

There is no positive relationship between long term debt and firm value.

Methodology

The population of study is made up of the 225 companies quoted on the Nigeria stock Exchange as at 31st December 2007. The cross-sectional survey research design was adopted in this study. This is because the data used in this study were collected at a particular point in time for each and every year. The sample was made up of 124 companies quoted on the Nigeria Stock Exchange as at 31st December 2007. The simple random sampling method (lottery method) was adopted in this study. All the 225 companies quoted on the Nigeria Stock Exchange as at 31st December 2007 were listed separated on a piece of paper of same size, folded and kept in a basket. By blind fold, 124 quoted companies were selected randomly. The secondary source of data was employed. The data were collected from annual reports and statements of account of the companies under consideration. The regression method of data analysis was adopted in this study. To be specific, the Ordinary Least Square (OLS) technique was adopted. Since this study sets out to test the relationship (association) between firm value and capital structure, the OLS correlation method is appropriate.

Model Specification

The model to be regressed in this study is presented in a relational form as follows:

Firm value = f (capital structure)
Firm value = f (Equity, Debt)

With the linear expression of the model being:

$FV = \alpha_0 + \beta_1 EQUITY + \beta_2 LTDEBT + \mu_\epsilon$

α_0, β_1 and β_2 are parameters to be estimated.
The apriori expectation is to follow the line of,

$\beta_1 > 0$ and $\beta_2 > 0$

Where; FV = firm value
EQUITY = equity capital.
LTDEBT = Long- term debt
μ_ϵ = error term.

Data Analysis and Result

The purpose of this study as mentioned in the introductory section of this paper is to examine the relationship between capital structure and firm value in Nigeria. The regression result obtained from the ordinary least square is presented below:

Regressor	Coefficient	Standard Error	T-Ratio	[Prob]
INPT	1.09	1.64	0.066	[.947]
EQUITY	- .42785	.29976	- 1 .4273	[.156]
LONG-TERM DEBT	2.4830	.17667	6.8834	[.000]

R-Squared .51988   R-Bar-Squared .50347

S.E. of Regression 2.90   F-stat. F (4, 117) 31.6726[.000]

DW-Statistic 2.0528

FIRM VALUE = 1.09 -0.42785 EQUITY + 2.4830 LTDEBT
            (0.66)   (-1.43)   (14.05)
R squared = 0.52   R Bar-squared = 0.50   F-stat (4,117) =31.67   DW-Stat = 2.1

From the above regression result using the Ordinary Least Square (OLS) estimation technique, it would be observed from the adjusted coefficient of determination ($\overline{R}^2$ = 0.504) that about 50% of systematic variation in the dependent variable (firm value) is explained by the independent variables.

This implies that the model is an average fit with average predictive power. The F-test which measures the existence of linear relationship between the dependent and independent variable revealed that a highly significant relationship exist between the variables. The F-calculated value of 31.67 is by far higher or greater than the F-critical value of 0.10 at 5% level of significance. Also, from the result, the Standard Error of Regression (SER) is 29% which is considered relatively good enough to confirm the predictive power of the model. Therefore, with the SER value, the model above is a very good model for policy making purposes. However, the observed value of DW is 2.1 which is approximately 2.00, revealed that there is the absence of serial correlation in the OLS results. This implies that the result can be used to draw policy suggestion.

Furthermore, the analysis of the parameter estimates and their t-ratios; indicative of the individual statistical significance of the explanatory variables shows that a significant positive relationship exist between Long-term Debt and Firm Value given that the t-calculated (14.05) is greater than the t-theoretical values at 5% (2.06) and 10% (1.70) levels of significance respectively. This indicates that as Long-term Debt increases, the Firm Value also increases. Thus, we reject the null hypothesis that Long-term Debt is not positively related to Firm Value. Conversely, the results also reveal that Equity is inversely related to Firm Value. This is at variance with our theoretical expectation. The relationship is also statistically insignificant at 1% and 5% significance levels respectively. Consequently; we accept the null hypothesis that Equity is not positively related to Firm Value. The DW-statistic of 2.1 shows that, the existence of stochastic dependence between successive units of the stochastic error term is unlikely; thus, we should be more confident that the estimated coefficient obtained in the study is unbiased.

Discussion

Following from the above regression results of long- term- debt and equity as components of capital structure, Long-term-debt was found to be the major determinant of firm's value. This is consistent with the findings of Myers and Majluf's (1984) pecking order theory, Myer's (1984) trade-off theory, and the traditionalist theory. The reason for this agreement is because both the finding of this research work and the findings of the above mentioned theories took cognizance of the market imperfections present in the real world. These imperfections include bankruptcy cost, agency costs, gains from leverage- induced tax shields and information asymmetries. This finding is however, inconsistent with M&M (1958) theory and Millers (1977) hypothesis with corporate and personal taxes, who find out that long-term-debt, is not related to firm's value.

Also, Miller (1977) opines that capital structure is unrelated to the value of a firm because the tax benefits which is adduced for the relevance of capital structure in relation to firm's value is offset by the fact that shareholders pay more tax than bondholders. This position of Miller (1977) is in consonance with that of Myers (1977) who opines that a firm with outstanding debt may have the incentive to reject projects that have positive NPV which may harm the firm's value.

Furthermore, this study reveals that in an emerging economy like Nigeria, equity capital as a component of capital structure is irrelevant to the value of a firm. This is surprising because it is in disagreement with the claims put forward by the proponents of the pecking order theory and the traditionalist theory of capital structure relevance. However, it is in agreement with the capital structure irrelevancy theory of Modigliani and Miller (1958), which states that equity capital is unrelated to firm value; and Millers (1977) hypothesis with corporate and personal income tax, which states that the capital structure of a firm does not impact on its market value.

Conclusion

This research work has examined the capital structure theory and its relationship with the value of the firm in the Nigerian setting, taking into cognisance 124 firms. All other theories, except the M-M theory (1958), have attempted to resolve the capital structure puzzle enunciated by M-M (1958) propositions. Each of this theory relaxes conditions under which the M-M (1958) theorem was derived. Based on this and the findings of this study, we can conclusively state that: capital structure decisions have various implications and one of them is its effect on the value of the firm which formed the basis of our study.

From the analysis so far, the following are highly recommended.

1   Following from the findings of this study that long-term-debt impact more positively on firm value, while equity capital does not impact positively; firms are therefore advised to employ more of long-term-debt than equity capital in financing their operations, because it results in higher firm value.
2   Also, corporate financial decision makers should employ more of long-term-debt than equity in their financial option. This is in line with the pecking order theory.
3   Firms are strongly advised to always compare the marginal benefit of using long-term-debt to the marginal costs of long-term-debt before concluding on using it in financing their operations. This is because as shown by this work, long-term-debt impact positively on firm's value unlike equity capital.

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Appendices

Appendix 1: Data Used To Run the Regression

SN	Firms	Equity	Long-Term Debt	Firm Value
1	Afriprint Nig. Ltd.	280,600,000	400,000,000	680,600,000
2	Ellah Lakes Plc	60,000,000		60,000,000
3	Okomu Oil Palm Co. Plc.	238,478,000	1,824,750,000	2,063,228,000
4	Presco Plc.	1,435,538,000	250,000,000	1,685,538,000
5	Nigerian Aviation Handling Co.	375,000,000	375,000,000	750,000,000
6	Al-Barka Air Plc.	1,032,990,000	1,032,990,000	2,065,980,000
7	Aviation Dev. Co. Plc.	93,255,000	93,255,000	186,510,000
8	Dunlop Nig. Plc.	2,385,335,000	2,385,335,000	4,770,670,000
9	R.T. BRISCOE (Nig) Plc.	226,920,000	226,920,000	453,840,000
10	Access Bank Plc.	3,489,081,000	3,489,081,000	6,978,162,000
11	AfriBank Nig. Plc.	2,554,000,000	2,554,000,000	5,108,000,000
12	Diamond Bank Plc.	4,699,956,000	4,699,956,000	9,399,912,000
13	EcoBank Plc.	10,827,114,000	10,827,114,000	21,654,228,000
14	Fidelity Bank Plc.	8,231,843,000	8,231,843,000	16,463,686,000
15	Guiness Nig. Plc.	737,463,000	737,463,000	1,474,926,000
16	International Breweries	256,457,000	256,457,000	512,914,000
17	Nigerian Breweries Plc	3,781,282,000	3,781,282,000	7,562,564,000
18	Benue Cement Co. Plc	1,392,188,000	525,421,000	1,917,609,000
19	Cement Co. Of Northern Nig. Plc.	638,339,000		638,339,000
20	Lafarge Cement (WAPCO Nig).	1,500,800,000		1,500,800,000
21	Nigerian Ropes Plc.	131,834,000	79,378,000	211,212,000
22	Berger Paint Nig. Plc.	108,684,000		108,684,000
23	Chemicals and Allied Products	105,000,000	101,942,000	206,942,000
24	DN Meyers Plc.	145,745,000		145,745,000
25	IPWA Plc.	256,350,000		256,350,000
26	Nigerian-German Chemical Plc.	76,893,000		76,893,000
27	National Sports Lottery	2,600,000,000		2,600,000,000
28	Red Star Express Plc.	257,248,000	116,409,000	373,657,000
29	Trans-Nationwide Express Plc.	66,273,000		66,273,000
30	NCR (Nig.) Plc.	54,000,000	844,615,000	898,615,000
31	Omatek Venture Plc.	10,000,000	217,879,000	227,879,000
32	Thomas Wyatt Nig. Plc.	50,000,000	70,570,000	120,570,000
33	Triple Gee and Co. Plc.	164,985,000	559,484	165,544,484
34	A.G. Leventis (Nig.) Plc.	1,103,037,000		1,103,037,000
35	John Holt Plc.	195,000,000	2,913,000,000	3,108,000,000
36	PZ Cussons Nig. Plc.	1,588,191,000		1,588,191,000
37	UAC of Nig. Plc.	17,247,400,000	864,500,000	18,111,900,000
38	Unilever Nig. Plc.	1,891,649,000	2,580,699,000	4,472,348,000
39	CAPPA and D'ALBERTO	98,438,000		98,438,000
40	Costain (West Africa)	79,960,000	1,267,479,000	1,347,439,000
41	Julius Berger Nig.	150,000,000	23,181,481,000	23,331,481,000
42	Roads Nig. Plc.	10,000,000		10,000,000
43	Capital Oil Plc.	29,386,825		29,386,825
44	Juli Plc.	89,002,000		89,002,000
45	Smart Products Nig. Plc.	18,000,000		18,000,000
46	CUTIX Plc.	264,196,000		264,196,000
47	Interlinked Technologies	18,939,000	10,086,000	29,025,000
48	7-Up Bottling Co. Plc.	256,236,000		256,236,000
49	Big Treat Plc.	1,000,000,000	1,563,382,000	2,563,382,000
50	Flour Mills of Nig. Plc.	776,533,000	10,294,649,000	11,071,182,000
51	Northern Nig. Flour Mill	74,250,000		74,250,000
52	National Salt Co. of Nig.	1,103,932,000	136,309,000	1,240,241,000

53	Nestle Nig. Plc.	330,273,000	6,779,003,000	7,109,276,000
54	Nig. Bottling Co. Plc.	654,367,000	2,962,000	657,329,000
55	Tantalizers Plc.	961,685,000	705,156,000	1,666,841,000
56	UTC Nig. Plc.	560,625,000	167,975,000	728,600,000
57	Fidson Health Care Plc.	89,181,000	51,681,000	140,862,000
58	Glaxosmithkline Consumer Nig.	478,351,000	258,357,000	736,708,000
59	May and Baker Nig. Plc.	350,000,000	21,562,000	371,562,000
60	Ntimeth Int. Pharm. Plc.	327,529,000	96,056,000	423,585,000
61	Capital Hotels Plc.	774,391,000		774,391,000
62	Alumnum Extrusion Ind. Plc.	109,978,000	127,555,000	237,533,000
63	First Aluminum Nig. Plc.	621,110,000		621,110,000
64	Charms Plc.	861,110,000		861,110,000
65	Starcomms Plc.	1,846,859,000	13,436,520,000	15,283,379,000
66	AIICO Insurance Plc.	1,873,757,000	239,884,000	2,113,641,000
67	Amicable Assurance Plc.	23,038,015		23,038,015
68	Consolidated Hall Mark Ins. Plc.	3,000,000,000		3,000,000,000
69	Continental Peinsu. Plc.	5,186,372,000	205,324,000	5,391,696,000
70	Cornerstone Insurance	2,160,903,000	125,984,000	2,286,887,000
71	Custodian and Allied Insurance	2,000,000,000		2,000,000,000
72	Equity Assurance Plc.	3,853,941,000		3,853,941,000
73	Goldlink Insurance Plc.	3,735,947,000		3,735,947,000
74	Great Nig. Insurance	750,000,000	83,215,000	833,215,000
75	Intercontinental Wapic Insurance	2,109,085,000	988,470,000	3,097,555,000
76	Int. Energy Insurance Co. Plc.	2,751,612,000		2,751,612,000
77	Lasaco Assurance Plc.	3,601,717,000	301,798,000	3,903,515,000
78	Law Union and Rock Insurance	1,718,665,000	257,237,000	1,975,902,000
79	Mutual Benefit Assurance Plc.	4,000,000,000	225,226,000	4,225,226,000
80	NEM Insurance Plc.	2,488,461,000	1,085,077,000	3,573,538,000
81	Prestige Assurance Plc.	859,994,000		859,994,000
82	Regency Alliance Insurance Plc.	1,075,000,000	321,861,000	1,396,861,000
83	Staco Insurance Plc.	2,414,739,000		2,414,739,000
84	Unic Insurance Plc.	1,291,148,000	1,453,432,000	2,744,580,000
85	Universal Insurance Co.	8,000,000,000		8,000,000,000
86	Japaul Oil and Maritime Service	583,098,000	1,595,363,000	2,178,461,000
87	Aso Savings and Loans	107,240,000	6,484,509,000	6,591,749,000
88	Union Homes Savings and Loans	2,500,000,000	9,000,000,000	11,500,000,000
89	AB Plast Product Plc.	12,500,000		12,500,000
90	Avon Crowncaps and Containers	284,989,000	204,558,000	489,547,000
91	Grief Nig. Plc.	21,320,000		21,320,000
92	Nampak Nig. Plc.	107,044,000		107,044,000
93	Nig. Bag Man. Co. Plc.	3,107,500,000	2,450,420,000	5,557,920,000
94	Poly Products Nig. Plc.	120,000,000	165,229,000	285,229,000
95	Studio Press (Nig.) Plc.	40,000,000	2,194,627,000	2,234,627,000
96	African Petroleum Plc.	394,394,000	929,641,000	1,324,035,000
97	Afrioil Plc.	30,359,000		30,359,000
98	Chevron Oil Nig. Plc.	126,994,000	1,367,420,000	1,494,414,000
99	Conoil Plc.	346,976,000	1,455,014,000	1,801,990,000
100	Eterna Oil and Gas Plc.	325,000,000	112,436,000	437,436,000
101	Mobil Oil Nig. Plc.	120,199,000	2,014,834,000	2,135,003,000
102	Oando Plc.	377,035,000	9,024,571,000	9,401,606,000
103	Total Nig. Plc.	169,761,000	2,846,009,000	3,015,770,000
104	Academy Press Plc.	100,800,000	34,358,000	135,158,000
105	Daily Times of Nig. Plc.	78,000,000		78,000,000
106	Longman Nig. Plc.	88,200,000		88,200,000
107	University Press Plc.	149,795,000		149,795,000
108	United Nig. Textiles Plc.	421,642,000	75,315,000	496,957,000
109	Nig. Textiles Mills Plc.	23,174,000		23,174,000

110	Ceramic Manufacturers	61,701,500		61,701,500
111	Wiggins Teape Nig. Plc.	40,500,000		40,500,000
112	Oceanic Bank International	5,821,003,000	109,867,823,000	115,688,826,000
113	Platinum Habib Bank	3,217,513,000	35,857,863,000	39,075,376,000
114	Stanbic IBTC Bank Plc.	9,375,000,000	27,533,212,000	36,908,212,000
115	Sterling Bank Plc.	5,276,423,000	11,634,139,000	16,910,562,000
116	Union Bank of Nig. Plc.	101,049,000,000	101,751,000,000	202,800,000,000
117	United Bank for Africa	5,748,000,000	1,135,000,000	6,883,000,000
118	Wema Bank Plc.	5,034,971,000		5,034,971,000
119	Zenith Bank Plc.	4,632,762,000	21,947,715,000	26,580,477,000
120	Guaranty Trust Bank	6,839,708,000	56,142,576,000	62,982,284,000
121	First City Monument Bank	4,751,215,000	11,233,685	4,762,448,685
122	G. Cappa Plc.	500,000,000		500,000,000
123	Anino Int. Plc.	6,050,000		6,050,000
124	Flexible Packaging Plc.	8,500,000		8,500,000

Source: annual reports of firms sampled

APPENDIX 2

Ordinary Least Squares Estimation
****
Dependent variable is FIRM VALUE
124 observations used for estimation from   1 to 124
****

Regressor	Coefficient	Standard Error	T-Ratio	[Prob]
INPT	1.67	2.89	.57915	[.564]
EQUITY	.33204	.39069	.84987	[.397]
LTDEBT	1.6712	.24278	6.8834	[.000]

****
R-Squared   .43938   R-Bar-Squared   .43011
S.E. of Regression   3.08E+10   F-stat.   F(2, 121)   47.4158[.000]
Mean of Dependent Variable 9.42   S.D. of Dependent Variable   4.08
Residual Sum of Squares   1.15E+23   Equation Log-likelihood   -3169.2
Akaike Info. Criterion   -3172.2   Schwarz Bayesian Criterion   -3176.4
DW-statistic   2.4697
****

Diagnostic Tests
****
*   Test Statistics   *   LM Version   *   F Version
****
*   *   *
* A:Serial Correlation*CHSQ(1)= 6.8846[.009]*F(1, 120)= 7.0542[.009]
*   *   *
* B:Functional Form   *CHSQ(1)= 14.7176[.000]*F(1, 120)= 16.1610[.000]
*   *   *
* C:Normality   *CHSQ(2)= 59165.7[.000]*   Not applicable
*   *   *
* D:Heteroscedasticity*CHSQ(1)= .96529[.326]*F(1, 122)= .95717[.330]
****
  A:Lagrange multiplier test of residual serial correlation
  B:Ramsey's RESET test using the square of the fitted values
  C:Based on a test of skewness and kurtosis of residuals
  D:Based on the regression of squared residuals on squared fitted values

APPENDIX 2

Cochrane-Orcutt Method AR (2) converged after 5 iterations
****
 Dependent variable is FIRMVALU
 124 observations used for estimation from   1 to 124
****

Regressor	Coefficient	Standard Error	T-Ratio [Prob]
INPT	1.09	1.64	.066395[.947]
LTDEBT	2.4830	.17667	14.0539[.000]
EQUITY	-.42785	.29976	-1.4273[.156]

****
 R-Squared   .51988 R-Bar-Squared   .50347
 S.E. of Regression   2.90 F-stat.   F (4, 117) 31.6726[.000]
 Mean of Dependent Variable 9.42   S.D. of Dependent Variable   4.08
 Residual Sum of Squares   9.83E+22   Equation Log-likelihood   -3109.6
 Akaike Info. Criterion   -3114.6   Schwarz Bayesian Criterions   -3121.6
 DW-statistic   2.0528
****

Parameters of the Autoregressive Error Specification
****
 U=   -.51413*U(-1)+   -.21440*U(-2)+E
   (*NONE*)   (*NONE*)
 T-ratio(s) based on asymptotic standard errors in brackets
****