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FIRM-SPECIFIC DETERMINANTS OF FINANCE LEASE OF LISTED NON-FINANCIAL FIRMS IN NIGERIA

Musa-Mubi, Aliya
Department of Accounting, Ahmadu Bello University, Zaria
aliyam.mubi@yahoo.com
+2348038045149

Mohammed, Lawal
Department of Accounting, Ahmadu Bello University, Zaria
lawal.mohammed.sani@gmail.com
+2348065783579

Abstract

Leasing as a source of financing investments in tangible assets has made significant contribution to capital formation of firms in the Nigerian economy over the years. However, the lease finance industry in Nigeria as a whole, seeks growth in conformity with the levels obtainable in developed economies. In spite of theoretical expositions on capital structure which extensively acknowledged the nature and use of finance leasing in corporate entities, lease financing in the Nigerian context appears to be largely biased towards MSMEs giving cause for inference of itsnon-prominencein Nigeria's corporate sector, especially among creditworthy listed firms who have access to alternative financethrough both the capital and money market. The body of existing literature from developed economies has documented a number of factors responsible for firms' disposition towards the use of finance lease as an instrument of assets financing, however, not much evidence has been documented in this regard in the Nigerian context. Given the dearth of empirical studies in Nigeria and the inconsistencies in findings of foreign researches on the subject matter, this study examined the firm-specific factors that influence use of finance lease by Nigerian firms. A sample of 14 listed non-

financial firms on the Nigerian Stock Exchange with finance lease obligationson their books were studied over the period 2007-2015 with a view to establishing the significance of profitability, growth opportunities, information asymmetry, risk of financial distress, agency cost and leverage in use of finance lease by firms. Consideration was likewise given to the possibility of past use of lease financing influencing the present use. After controlling for the adoption of IFRS, a Bootstrap-based Fixed-effects regression was run. The study found the use of lease financing by firms to be significantly and negatively influenced by leverage confirming the lease-debt substitutability proposition in the literature. Additionally, with alternative finance sources available, firms with a past history of leasing are more likely to engage in it than firms without. Consequently, we recommended that, managers of leasing businesses become innovative in raising awareness and developing competitive leasing arrangements and products for the corporate sector so as to attract them into taking up contracts. On the other hand, listed non- financial firms should also consider the potential of finance lease as an option for mitigating agency costs of debt financing.

Keywords: *Finance Leasing, Firm-Attributes, Agency Costs, Pecking Order, Bankruptcy Costs*

1. Introduction

Financing, investing and dividend decisions are key decision areas in the field of finance. The relevance of financing decision in corporate financial management cannot be overemphasised. Since the ground-breaking work of Modigliani and Miller (1958) and subsequently in 1963, there has been a proliferation of theories and research into the firm capital structure. A number of theories, which are sometimes conflicting, have been propounded with a view to explaining firms' capital structure behaviour. Myers (1984) considered firms' capital structure decision as a puzzle that may never be solved, albeit explained, because a host of competing factors (firm-level, institutional and macroeconomic) influences firms' financing decision under different conditions and at different times (Harris & Raviv, 1991; Rajan & Zingales, 1995; Demirguc-Kunt & Maksimovic, 1996).

The drive towards the achievement of set organisational objectives; principal of which includes maximisation of shareholder wealth, influences choices of source of long term funding and its efficient utilisation through investment in assets for productive activities (Brealey, Myers & Allen, 2012). The selection of a particular source of long term finance or a mix of choices of debt and equity, constitute what is commonly referred to as the 'capital structure' of corporate entities (Pratheepkanth, 2011). Research into firms' capital structure has largely been

focused on the broad definition of debt and equity mix (total leverage) whereas, specific key aspects of debt like the lease components are predominantly ignored. Finance lease is a peculiar asset-based form of debt financing resulting in the acquisition of a tangible non-current asset instead of liquid cash (Kraemer-Eis & Lang, 2012). Besides the use of equity (shareholders' investments), debt instruments or facilities and hire purchase agreements, leasing is another finance avenue resorted to in asset acquisition. It is an arrangement whereby a party, lessee, obtains the right to use an asset for a defined period of time in exchange for a consideration of regular lease rental payments to another, a lessor (Yan, 2006).

The Equipment Leasing Association of Nigeria (ELAN, 2015) highlighted the relevance of this finance alternative to the Nigerian economy given its contribution to capital formation in excess of 1.6 trillion naira over the years 2000-2014. The Federal Inland Revenue Service of Nigeria (FIRS) Circular (2010) correspondingly informed of the growing popularity of leasing due to the domestic high costs of non-current assets, the shortage of foreign exchange raising costs of its imports and the accessibility through leasing, of a hundred percent (100%) credit financing.

In 2015, the lease industry recorded a growth rate of 27.39% with an outstanding volume of transactions valued at 1.1 trillion naira. Out of this, finance leases accounted for a significant 75%with serviced sectors including the oil and gas, transportation, manufacturing, telecommunications and agriculture (ELAN, 2016). Nigeria, in addition to Morocco, Egypt and South Africa, was also placed among the top 50 countries in 2013 and 2014 by volume of lease transactions valued at 0.68 and 0.50 billion dollars respectively (White Clarke Group, 2015 & 2016). Its performance however, is still significantly short of what obtains in the developed economies (e.g. United States, United Kingdom, Germany, and Japan amongst others).

The suitability of finance leasing by corporate bodies can be seen in that it presents with less threat of loss of company control through bankruptcy, or the dilution of shareholding associated with the use of either debt or equity methods of financing (Owoeye, 2004). The impetus for leasing is equally supported by the capital structure theories considering certain attributes of firms. In the context of the pecking order theory (Myers, 1984; Myers & Majluf, 1984), where information asymmetry abounds, higher costs of capital may prevail due to the consideration of risk (Cortez & Susanto, 2012) with finance leasing becoming a last resort alternative.

Myers and Majluf (1984) contended that investors while trying to avoid adverse selection, discount the prices of equity thereby making it costly and compelling firms to follow an order of preference in financing. Profitability in firms reduces the tendency to engage in leasing as it provides first stage level of internal financing in line with pecking order theory postulation (Erickson & Trevino, 1994). Growth-opportuned firms on the other hand, may require significant funds from external sources for which a strategy of maintaining low-risk debt structures could be adopted. Fama and French (2002) related this to forestalling underinvestment in the absence of internal funding. This is besides cash conservation obtainable with lease financing.

Separation of ownership and control in corporate entities gives rise to agency problems and associated costs as propounded by Jensen and Meckling (1976) in the agency cost theory. By the mitigating alignment of interests of managers and shareholders through directors' shareholding and introduction of debt, the cash at disposal could however, incentivise managers to pursue risky investments (asset substitution) aimed at generating high returns for the shareholders in whose interests they act (Smith & Warner, 1979).

The subsequent exposure of debt holders to this risk by their investments and entitlement to only a fixed portion of the gain where the payoff is positive, necessitates the constitution of mechanisms safeguarding their interests. One, is finance leasing through which asset substitution could be avoided by committing a firm to the use of an asset over the period of lease (Smith & Warner, 1979; Robicheaux, Fu & Ligon, 2008; Zhou, 2014). Smith and Wakeman (1985) also opined that finance leasing presents with priority over secured, unsecured debt and equity in the event of bankruptcy. Costs of financial distress are lower to the lessor due to higher capacity for repossession of leased assets than even collaterals in secured debts. This may make it easier for distressed firms to contract.

Pursuant to the above, it could be posited that leasing be regarded as a substitute to regular debt. Where extended debt financing is a function of borrowing capacity as inferred from the leverage position in the financial statements, finance leasing has the same payment structure and encroaching effect of a capitalised liability (Kang & Long, 2001; Mendes, 2015). Arguments for complementary relationships take root in the contention that highly levered firms are constrained to the point that leasing becomes the likely procurable option. Substitution itself can ironically be seen to give strength to the proposition that leasing is instead a complement source of finance (Lasfer & Levis, 1998; Filareto-Deghaye & Severin, 2007; Malik, Saeed, Ahmed & Javed, 2012).

In spite of the vast number of theoretical premise, the fact that in 2015, 80% of the lease transaction spread was handled by non-bank lessors whose concentration was on financing the Micro, Small and Medium scale Enterprises (MSMEs) (ELAN, 2016), gives room for inference that leasing may not be predominant in the corporate sector particularly in listed firms with access to other forms of finance through the capital and money markets.Although there are studies on capital structure in Nigeria, a limited number specifically consider the factors which influence firms' choice of lease financing among listed firms. The extant studies reviewed such as Oko & Egwu (2014), assessed leasing propensity from the purview of the psychological orientation of management of corporate firms. Noting a preference for bank loans, Oko & Isu (2013) examined the marketing strategies employed by these banks, which secures for them an edge over the activities of leasing businesses thus, affecting the patronage of lease finance.

These studies precluded in analysis, other possible factors that could influence the use of lease finance by firms. It may be that there are certain features entities portray which make lease financing probable in their capital structure; it is this line of thought that forms the central argument of this paper. Consequently, the objective of this paper is to determine the extent to which firm-specific characteristics such as profitability, growth opportunities, level of information asymmetry, agency costs, probability of financial distress and leverage explain the use of leasing by corporate entities. This is also considering that studies conducted in other climes have registered conflicting results (Morais, 2013).

The paper focuses on examining the factors that influence the behaviour of listed non-financial firms (excluding the financial services sector) towards the use of lease as source of external long-term financing in their capital structure. The exclusion of firms in the financial sector is due to the principal role that they play as lessors of assets and better achievement of the objective by considering strictly lessee firms. A study of this nature is important given not only the role that leasing plays in facilitating asset acquisition and enhanced productive performance of businesses, but the budding stage at which the industry still subsists in comparison to the developed economies. The management of leasing businesses can have their strategic plans informed in achieving leasing penetration in the corporate sector.

2. Literature Review and Hypotheses Development

Finance lease is a non-cancellable contractual agreement requiring the payment over a period (significant part of asset economic life) of an amount that ensures the amortisation of the cost of the asset and a provision of return in form of

interest to a lessor. This is coupled with the option given to the lessee to purchase the asset at the end of the agreement for a percentage of its fair value at the time (Revised Guidelines for Finance Companies in Nigeria, 2014). Akinola (2013) described the arrangement as one where the lessee is given the 'first right of recourse' (priority) to purchase the asset at a nominal value. This can be at the end of either the primary (first) or secondary (renewed) lease tenure (Oko & Essien, 2014).

Other variants of a finance lease which is sometimes referred to as a capital or full pay-out lease (Oko & Essien, 2014), include the leveraged lease and sale-leaseback transaction. The leveraged lease is one where a third party other than the lessor and lessee is involved- usually a financial or lending institution that provides for a significant part of the asset purchase price (FIRS, 2010). The sale-leaseback occurs in the form of a sale of an asset and its subsequent lease thus improving firm liquidity with the uninterrupted possession and use of the asset (Stojanovic and Guzovski, 2013). A finance lease can equally be a sale-type for the reason that gains or losses accrue to the lessor where the fair value of the leased asset is higher or lower than the carrying amount in the financial statements (of the lessor) at the commencement of the lease agreement (FIRS, 2010).

In lessee firms, the relationship between profitability, an indicator of earnings, and leasing is expected to be negative as established in the studies; Kang and Long (2001), Brage and Eckerstom (2009) and Mendes (2015). Assuming the maintenance of a constant/target dividend payout policy, the greater the level of profitability, the greater the proportion of retained earnings to finance asset acquisition and consequently, the lower the level of leasing. Erickson and Trevino (1994) posited that being a debt-like form of finance, leasing should be low with the availability of internal funds. The correlation in the study was however, statistically insignificant. In contrast, Lasfer and Levis (1998) estimated a positive relationship between profitability and leasing by large companies. This can be explained by the deductible tax allowances that obtain with finance lease and which these firms may seek to exploit. The following null hypothesis was formulated in relation to profitability:

$H0_1$: Profitability has no significant effect on finance leasing by listed non-financial firms in Nigeria.

Growth opportunities spur the need for finance. With this, tends to be a strategy of cash conservation and going by the pecking order theory (Myers & Majluf, 1984), when internally generated finance is exhausted, firms will seek external sources.

Leasing enhances liquidity through the spread of lease payments that are equally tied to the returns generated by the use of the asset. In high growth firms, agency costs of debt financing such as asset substitution can be avoided. A positive relationship is expected as found in the works of Erickson and Trevino (1994), Lasfer and Levis (1998), and Callimaci, Fortin and Landry (2011). Brage and Eckerstom (2009) arrived at a positive but insignificant relationship. Differing still, Erickson and Trevino (1994); Malik, Saeed, Ahmed and Javed (2012), Mungami (2013) concluded on a negative relationship whereas Li (2014) achieved an absence of correlation. Erickson and Trevino (1994) used dual proxies (asset and sales growth) which explain the contrasting findings. Growth in sales increases internal reserves, reducing the need to lease. The null hypothesis derived with respect to growth opportunities is as follows:

$H0_2$: Growth opportunities have no significant effect on finance leasing by listed non-financial firms in Nigeria.

A discrepancy in the information available to the management of firms and investors raises cost of finance to compensate for risk. Leasing can be said to positively correlate with the information asymmetry of firms as it is regarded as safe and low-risk (Krishnan & Moyer, 1994). Prior works use size as a measure for the level of information asymmetry reason being that small firms tend to present investors with greater level of uncertainty as to performance and prospects in contrast to large firms (Adams & Hardwick, 1998; Callimaci, Fortin & Landry, 2011; Mungami, 2013). The high information asymmetry with small firms leads to limitations in accessing other sources of finance and increase in leasing (Sharpe & Nguyen, 1995). Neuberger and Rathke-Doppner (2012) interestingly found that firms with high information asymmetry may likewise be constrained beyond the general credit market and in securing lease finance. The following null hypothesis was developed in relation to information asymmetry:

$H0_3$: Information asymmetry has no significant effect on finance leasing by listed non-financial firms in Nigeria.

The probability of a firm going bankrupt can constrain its access to external finance. Krishnan and Moyer (1994) posited that the higher the potential for bankruptcy in a firm, the higher the tendency to engage in leasing as it may be the only option of financing procurable as well as the lowest in terms of costs. Smith and Wakeman (1985) opined that in the event of bankruptcy, it is easier for the lessor to regain possession of an asset than a secured lender with collateral. The lessor would consequently offer lower interest rates that make leasing attractive. This position will hold for as long as the advantage inherent in low bankruptcy

costs to the lessor, are not offset by high transaction costs of contracting. Erickson and Trevino (1994), Filareto-Deghaye and Severin (2007), Brage and Eckerstom (2009) and Mendes (2015) documented a positive correlation between financial distress and leasing while Li (2014) found an absence of relationship. A null hypothesis was therefore formed as to risk of financial distress:

$H0_4$: Risk of financial distress has no significant effect on finance leasing by listed non-financial firms in Nigeria.

In the presence of regular debt and directors' shareholding which both result in an alignment of interest between management and shareholders, agency costs of debt can generate in form of asset substitution (Myers, 1977). With existing debt, leasing can minimise asset substitution by further contracting a firm with asset-based debt finance. Another way the problem is forestalled is that as a non cancellable lease agreement, finance leasing commits a firm to utilise an asset over the period of the lease (Chigurupati & Hegde, 2009).

It is thus expected that agency costs (directors' shareholding) should positively correlate with the presence of finance leases in listed firms (Mehran, Taggart & Yermack, 1999; Robicheaux, Fu & Ligon, 2008; Brage & Eckerstom, 2009; Mungami, 2013). Munga and Ayuma (2015) however arrived at a negative relationship which could be premised on the incidence of high agency costs between a lessor and lessee. This can be attributed to the separation of control from asset ownership that could foster moral hazard even in finance leases where option to purchase is not exercised. The high agency costs could be factored into lease payments making it expensive and warranting low patronage. The null hypothesis in relation to agency costs is as follows:

$H0_5$: Agency cost has no significant effect on finance leasing by listed non-financial firms in Nigeria.

The relationship between leverage and leasing has remained inconclusive in empirical research popularly referred to as the 'leasing puzzle' (Ang & Peterson, 1984). Kang & Long (2001), Mendes (2015) and Bialek-Jaworska and Nehrebecka (2016) established that leasing affects the debt capacity of firms and are substitutes. This can be understood in terms of leases being long term contractual obligations on the firm to make periodic payments amortising the capitalised liabilities. Malik, Saeed, Ahmed and Javed (2012) reasoned that the substitution explanation can be the basis for understanding complementary relationships where they exist in the sense that firms with limited access to debt-financing or constrained debt capacity characterised by high gearing, can resort to

leasing as a 'substitute' and 'complement' to existing debt. Krishnan and Moyer (1994) posited that for these firms, it may be the only option available or the option with lower costs. Ang and Peterson (1984) found that firms with high level of leased assets tended to have more debt in their capital structure. This is corroborated by the works of Lasfer and Levis (1998), Filareto-Deghaye and Severin (2007), Eisfeldt and Rampini (2009) and Malik, Saeed, Ahmed and Javed (2012). The following null hypothesis was constructed in relation to leverage:

$H0_6$: Leverage has no significant effect on finance leasing by listed non-financial firms in Nigeria.

It can be observed that for all firm attributes of profitability, growth opportunities, information asymmetry, agency costs, financial distress/probability of bankruptcy and leverage, the findings of the studies reviewed above differ. There is yet to be a documentation of the direction and significance of correlation with finance leasing, using firms listed in Nigeria. The methodologies of the studies with the exception of Bialek-Jaworska and Nehrebecka (2016), have also not considered the use of a dynamic panel assuming the variable, finance leases to be autoregressive. The use of System Generalised Method of Moments (System GMM) in the referred study holds due to the large sample of 50, 000 companies obtained and which may not be the case in the Nigerian context. This necessitated the consideration of the Bootstrap-based fixed effects regression as used in the study.

The theoretical framework adopted comprises of the; agency cost, bankruptcy cost and pecking order theories. According to Smith and Warner (1979), Robicheaux, Fu and Ligon (2008), Zhou (2014), agency costs of debt can be controlled through lease financing mitigating asset substitution and underinvestment. In recognition of the assertion by Jensen and Meckling (1976) that agency costs of debt could lead to bankruptcy from the pursuit of high risk investments, Krishnan and Moyer (1994) noted that the ease in repossession of the leased asset as against collaterals in regular debt financing, lowers bankruptcy costs for the lessor and consequently, lease rates for the lessee. In the scale of preference for financing, leasing is preferable to other forms of debt being less costly for firms with high levels of information asymmetry (Ezzell & Vora, 2001).

3. Methodology

The study was anchored on a correlation research design using panel data. The population of the study, defined as the aggregate of non-financial firms listed on the Nigerian Stock Exchange as at 31st December, 2015 amounts to 128. Using a filter where only those companies with a history of lease obligations reported in

the Statement of Financial Position from 2007 to 2015 were selected, the modified population also corresponding to the sample is 14 listed non-financial firms. Data was extracted from the audited annual reports and accounts to facilitate estimation of the model provided as follows;

$$FINL_{it} = \beta_{it} + \beta_1 PROFc_{it} + \beta_2 GROWTHOPP_{it} + \beta_3 INFASYM_{it} + \beta_4 FIND_{it} + \beta_5 AGENCY_{it} + \beta_6 LEV_{it} + \beta_7 IFRSADP_{it} + \beta_8 FINL - AR1_{i,t-1} + \beta_9 FINL - AR2_{i,t-2} + \varepsilon_{it}$$

Where: ***FINL***= Finance Lease; ***PROF***= Profitability; ***GROWTH OPP***= Growth Opportunities; ***INFASYM***= Information Asymmetry; ***FIND***= Financial Distress; ***AGENCY***= Agency Cost; ***LEV***= Leverage; ***IFRSADP***= IFRS Adoption; ***FINL-AR1***= First lagged value of the dependent variable at level; ***FINL-AR2***= Second lagged value of the dependent variable at level; **it**= Subscript denoting firm and time point; β_0= Constant term; β_1 – β_9= Coefficients for estimation and; ε= Residual or Error term. A summary of the variables and measurement is given in the Table 3.1 provided as an appendix.

The dependent variable (Y_{it}) is auto-regressive being that prior year trends are assumed to predict that of subsequent years. This necessitated the introduction of an endogenous regressor in form of at least a lagged value of $Y_{it.}$ This treatment is consistent with those of many contemporary studies on capital structure like Lemma and Negash (2013); Gill (2014) and Etudaiye- Muhtar and Ahmad (2014).The Hausman Specification test was done to enable the selection of either a Fixed-effects or Generalised Least Square (GLS) regression in the likelihood of existing panel effects. Given the nature of the model- a dynamic panel, its consistency was ensured by the use of a Bootstrap-based regression that corrects heteroscedasticity, cross sectional dependence patterns and is suitable for any range of 'n' and 't' thus, eliminating the problem of dynamic panel bias (De Vos, Everaert & Ruyssen, 2015).

The System Generalised Method of Moments (GMM) technique was considered less suitable given its weak small sample properties as well as complexities in the choice, validity and number of instruments to use (De Vos, Everaert & Ruyssen, 2015).Inferences as to the strength of association between the independent and dependent variables were made on p-values lower than the acceptable levels of significance given by 1%, 5% and 10%. In addition to the model estimations, robustness tests for multi-collinearity were conducted. All analysis was done using the statistical software, STATA 13 to ensure reliability of results.

Table 3.1: Summary of Variables and Measurement

Variable:Independent	Measurement	Sources
Profitability	Ratio of Earnings before Interest, Taxes, Depreciation and Amortisation (EBITDA) to Sales/ Turnover	Ang and Peterson (1984), Deloof and Verschueren (1999), Kang and Long (2001)
Growth Opportunities	Ratio of Market to Book Value of Ordinary shares	Lasfer and Levis (1998), Callimaci, Fortin and Landry, (2011), Malik, Saeed, Ahmed and Javed (2012), Mungami (2013)
Information Asymmetry (Size)	Log of Sales/Turnover	Adams and Hardwick (1998), Callimaci, Fortin and Landry (2011), Mungami (2013)
Financial Distress	Altman Z-score	Erickson and Trevino (1994), Brage and Eckerstom (2009), Mendes (2015)
Agency costs	Percentage of shares held by Directors out of total outstanding shares in issue	Modified construct of measure used in Mehran, Taggart and Yermack, (1999), Robicheaux, Fu and Ligon, (2008), Mungami, (2013)
Leverage	Ratio of Non-current Debt (excluding lease liabilities) to Equity	Modified construct of measure used in Filareto-Deghaye and Severin (2007)
Dependent: Finance Leases	Ratio of Long term lease obligations to Total Assets	Modified construct of measure used in Lasfer and Levis (1998), Kang and Long (2001)
		Innovation of Study
Control:		
IFRS Adoption	Dummy measure of 0 and 1 for non-adoption and otherwise	

Source: Authors, 2016

4. Results and Discussion

The analysis of the descriptive statistics is hereby given following which, is the regression result used in the test of hypotheses.

Table 4.1 Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
FINL	123	1.068293	2.841981	0	25.47
PROF	123	10.08065	15.13842	-35.23	83.14
LEV	123	28.25179	89.38313	-540.33	255.09
FIND	123	1.781626	1.377573	-2.14	7.56
AGENCY	123	18.22398	23.07653	0	84.44
GROWTHOPP	123	2.462764	5.283962	-18.03	33.42
INFASYM	123	6.526585	.8033126	4.97	8.38
FINL-AR1	122	1.072131	2.853381	0	25.47
FINL-AR2	121	1.076033	2.864918	0	25.47
IFRSADP	125	.536	.5007092	0	1

Minimum and Maximum figures are in percentages excluding 'FIND', 'INFASYM' and 'IFRSADP'.
Source: STATA 13 output (Appendix)

The number of observations from the table ranges between 121 and 125. This is due to the nature of the panel data having unavailable inputs for some years, which makes it unbalanced. 'FINL' describes finance lease which accounts for an average of 1% of total assets across the firms. The minimum and maximum proportions of total assets so financed are 0 and 25% respectively. These values suggest the rarity or uniqueness of leasing in the capital structure of listed non-financial firms. The pattern likewise influences the descriptive for lagged values of 'FINL' defined by 'FINL-AR1' and 'FINL-AR2'.

Profitability defined by 'PROF' is at an average 10% of sales. The minimum value of -35% which is obtainable, can be interpreted as the extent of loss recorded in the sample of firms. The maximum profit of 83% suggests either impressive operating efficiency or income generation. The wide range between these values further confirms the tendency of profit to be volatile. 'LEV' stands for leverage excluding lease obligations, the mean being 0.28 times of equity. The minimum and maximum values are -5.40 and 2.55 which could signify that some companies have eroded their capital from incurring losses over the years and are thus reporting negative values for equity. The minimum figure for profitability (PROF) obtained can be seen to corroborate this assertion. As for the maximum value of 2.55, an explanation could be the preference of firms for debt over equity (given the tax shields) in line with the pecking order theory.

'FIND' representing financial distress or the probability of bankruptcy and measured by the Altman Z-score, has for the minimum, average and maximum, values of -2.14, 1.78 and 7.56. It is a computed composite of financial ratios inclusive of profitability and leverage. Scores lower than 1.8 for the Z-score are indicative of financial distress and a high risk of bankruptcy. An Altman Z score less than 0 can be attributed to firms reporting a negative equity. This further explains the minimum of growth opportunities, 'GROWTHOPP' measured by market to book value of ordinary shares at -0.18, the maximum being 0.33 with a mean of 0.02. As for logged values of revenue, a measure of firm size to represent Information Asymmetry, 'INFASYM', the minimum, mean and maximum are 4.97, 6.52 and 8.38. The actual figures show that revenue ranges between ₦94, 027 and ₦240, 618, 693. Dummy values for the adoption of IFRS, 'IFRSADP', can only have a maximum of 1 and minimum of 0.

Agency costs, 'AGENCY', measured by Directors' shareholding, has a maximum of 84% due to the prevalence of the Non -Executive directors having interests in the firms besides the Executives. In some cases, the Non -Executive directors are seen to have investments greater than that of the Executives. These holdings are taken into account because they constitute a ground for agency costs with the

creation and alignment of interests particularly for those who are expected to be independent of the firms for income other than fees and allowances. The minimum and average values of these shareholdings are 0 and 18% respectively.

The Fixed-effects regression estimations are provided in the table as follows;

Table 4.2 Regression Results

Variable	Coefficient	Bootstrap Std. Errors	Z-Statistics	P > {z}
_CONS.	20.30746	21.82198	0.93	0.352
PROF	-.0023808	.0172163	-0.14	0.890
LEV	-.0151952	.0074366	-2.04	0.041
FIND	-.0320406	.260558	-0.12	0.902
AGENCY	.0047019	.0272868	0.17	0.863
GROWTHOPP	.0713011	.0694511	1.03	0.305
INFASYM	-3.101861	3.471266	-0.89	0.372
FINL-AR1	.6902083	.396943	1.74	0.082
FINL-AR2	-.2789722	.1907864	-1.46	0.144
IFRSADP	1.426515	1.200275	1.19	0.235

R^2 (within) - 0.5055
Wald chi2 (9) - 23.33
Prob > chi2 - 0.0055
Source: STATA 13 output (Appendix)

The coefficient of determination (R^2) informs about the percentage of variation in the dependent variable accounted for by the independent variables as a whole which is 50.55%. 49.45% can be inferred as caused by other factors outside the model. The Wald chi2 statistic of 23.33 with significance at 1% indicates the proper selection and combination of the explanatory variables which makes the model fit to have been used for estimation. Multi-collinearity tests (see Appendix) for the independent variables, show values less than 10 for the Variance Inflation Factor (VIF) and below 1 for the Tolerance Values (1/VIF). These indicate absence of harmful multi-collinearity that could impair validity of results. The Hausman Specification test (see appendix) confirmed the choice of a Fixed-effects regression given the nature of the data which is panel. Correspondingly, the report of Bootstrap Standard errors corrects for any heteroscedasticity present.

Test of Hypotheses

The six hypotheses formulated are hereby tested and implications discussed. It is worth noting that the adoption of IFRS (IFRSADP) has been found to be insignificant. Its purpose as a control in the model was to ensure the avoidance of

spurious estimations of the relationship between the explanatory and outcome variables due to its application.

H0$_1$: *Profitability has no significant effect on finance leasing by listed non-financial firms in Nigeria.*

Profitability can be inferred to be negatively but insignificantly correlated with finance lease use at a coefficient of -0.0023 and p-value of 0.890. This conforms to the expectation that firms would abide by a pecking order- preferring to first utilize internal sources of finance (such as reserves) for investments before seeking external funding through debt (either conventional or leases). Similar findings were obtained by Kang and Long (2001), Brage and Eckerstom (2009) and Mendes (2015). The lack of significance in correlation at all levels leads to non-rejection of the hypothesis and has equally been reported by Erickson and Trevino (1994)

H0$_2$: *Growth opportunities have no significant effect on finance leasing by listed non-financial firms in Nigeria.*

Growth opportunities can be seen to be positively but insignificantly related to the use of finance lease with a coefficient of 0.0713 and a p-value of 0.305. The higher the growth prospects of a firm, the greater will be its need for finance. Leasing improves the liquidity position of firms through cash conservation while cushioning against agency costs of traditional debt financing. The following studies corroborate the relationship obtained: Erickson and Trevino (1994), Lasfer and Levis (1998) and Callimaci, Fortin and Landry (2011). Brage and Eckerstom (2009) reported a positive but insignificant relationship as with this study. The hypothesis is consequently not rejected.

H0$_3$: *Information asymmetryhas no significant effect on finance leasing by listed non-financial firms in Nigeria.*

Interpretation for the effect of information asymmetry on finance lease is made in respect of the measure, size, which has an insignificant negative coefficient of -3.1018 (p-value, 0.372). The greater the size of firms, the lower is expected the information asymmetry as large firms are typically diversified and tend to report significantly on scale of operations. Small firms present with uncertainty and the risks associated therein constrain them in securing external finance due to high costs of capital. The smaller the firm, the higher the information asymmetry and the tendency to engage in finance lease. A negative correlation between size and leasing is equivalent to a positive correlation between information asymmetry and

finance lease use as found in the works of Sharpe and Nguyen (1995), Eisfeldt and Rampini (2009), Malik, Saeed, Ahmed and Javed (2012), Mungami (2013) and Li (2014). The insignificance of the coefficient estimated, leads to the non-rejection of the hypothesis.

H0$_4$: *Risk of Financial Distress has no significant effect on finance leasing by listed non-financial firms in Nigeria.*

The Altman Z-score is a measure of financial distress and the consequent probability of a firm filing for bankruptcy. Lower scores indicate a financially distressed firm which would be severely impaired in accessing external finance. As reviewed in the literature, leasing is expected to be a last resort alternative with an ease of contracting due to the lessor being accorded priority in claims and an ability to repossess the asset at lower costs than a secured lender of conventional debt. The results reveal that the measure Altman Z for Financial Distress, has a negative correlation with finance lease given a coefficient of -0.0320 but insignificant at a p-value of 0.902. This translates to a positive (though insignificant) relationship between financial distress and finance lease. The finding is similar to that achieved by Erickson and Trevino (1994), Filareto-Deghaye and Severin (2007), Brage and Eckerstom (2009) and Mendes (2015). The lack of significance of effect provides ground for the hypothesis not being rejected.

H0$_5$: *Agency cost has no significant effect on finance leasing by listed non-financial firms in Nigeria.*

Agency cost measured by directors' shareholding has a positive but insignificant relationship with finance lease- coefficient 0.0047 and p-value, 0.863. The higher the shareholding of members of the Board (Executive and non-executive), the more aligned their interests with shareholders which could present an agency cost to existing and potential debt holders. Finance lease is propositioned as an agency cost reducing debt structure which should complement agency cost of equity mitigating systems. This is the basis for the positive relationship expected and obtained as in the work of Mehran, Taggart and Yermack (1999), Robicheaux, Fu and Ligon (2008), Brage and Eckerstom (2009) and Mungami (2013). The insignificance affirms the non-rejection of the hypothesis as agency cost is not a strong explanation for the use of finance lease in the Nigerian context.

H0$_6$: *Leverage has no significant effect on finance leasing by listed non-financial firms in Nigeria.*

With a negative coefficient of -0.0151 and p-value of 0.041 significant at 5%, the degree of debt in capital structure influences the use of finance lease. Where debt is high, the tendency to engage in leasing reduces and this could be attributed to the similarity between these means of financing thus, confirming the debt-lease substitutability theory. The result sheds more light on why financial distress though expected to instigate leasing, is not a strong determinant. Firms with a probability for bankruptcy face problems in meeting their interest and principal repayment obligations. Finance leases have similar payment structures as debt and though easier to contract where the need arises, it presents with the same effects worsening the distressed position of a firm. Highly levered firms may also shy away from leasing because it increases gearing ratio particularly where there is a threshold set by firms to be maintained or the presence of covenants restricting firms to specific debt levels. Findings are in line with the works of Kang and Long (2001) and Mendes (2015) giving impetus for the rejection of the hypothesis.

The lagged value 'FINL-AR1' with a positive coefficient 0.6902 significant at 10% (p-value, 0.082), could be interpreted as the increased likelihood of a firm leasing by the extent to which such form of financing had been used in the past. Firms may also engage in leasing if it has previously proved beneficial. One possibility is the tax reliefs obtainable in both capital allowances and tax deductible expense on finance charges and asset use. The negative correlation for 'FINL-AR2' may further suggest that even with the probability of leasing in these firms, a threshold could be obtainable which is not to be exceeded. Lease levels may therefore be adjusted and kept within a range. This is similar to the finding of Bialek-Jaworska and Nehrebecka (2016) which although significant, concluded on the instability of finance lease in the capital structure of firms.

5. Conclusion and Recommendations

The evidence suggests that in the Nigerian context, Finance leasing is significantly determined by the level of debt employed by firms in their capital structure; that is, leasing is a substitute to debt. Being that these firms are listed, the issue of conventional debt instruments or financing by money market institutions appears to be the first order of preference besides internal reserves except where a disadvantage obtains in form of information asymmetry raising the procurable cost of capital. Listed firms can also be concluded to not use finance leasing as an agency cost of debt control perhaps due to the adoption of other means like debt covenants or the issue of convertible loan stock. The management of leasing businesses should be innovative in offering competitive leasing arrangements to firms in the corporate sector in order to encourage

patronage. A well-designed marketing approach should be adopted in raising awareness of the features and advantages of leasing in financing asset investment. Firms could equally consider the potential of leasing in reducing problematic agency costs of debt finance.

References

Adams, M. & Hardwick, P. (1998). Determinants of the leasing decision in United Kingdom listed companies. *Applied Financial Economics*, 8 (5), 487-494.

Akinola, A. O. (2013). Entrepreneurship in Nigeria- funding and financing strategies. *European journal of Accounting, Auditing and Finance Research*, 1 (4), 115-128.

Ang, J. & Peterson, P. P. (1984). The leasing puzzle. *Journal of Finance*, 39 (4), 1055-1065.

Bialek-Jaworska, A. & Nehrebecka, N. (2016). Determinants of Polish enterprises' propensity to lease. Working Paper No. 7. University of Warsaw, Poland.

Brage, V. & Eckerstom, G. (2009). *Leasing: A comparative study of Japanese and Swedish retail firms*. Bachelor Thesis, Goteborgs Universitet, Sweden.

Brealey, R. A., Myers, S. C., Allen, F., & Mohanty, P. (2012). *Principles of corporate finance*. Tata McGraw-Hill Education.

Callimaci, A., Fortin, A. & Landry, S. (2011). Determinants of leasing propensity in Canadian listed companies. *International Journal of Managerial Finance*, 7 (3), 259-283.

Chigurapati, V. R. & Hegde, S. P. (2009). Capital market frictions, leasing and investment. Working Paper. *SSRN Electronic Journal,* 3/2009; DOI: 10.2139/ssrn.1359277

Cortez, M. A. & Susanto, S. (2012). The determinants of corporate capital structure: Evidence from Japanese manufacturing companies. *Journal of International Business Research,* 11, 121-134;

Deloof, M. & Verschueren, I. (1999). Are leases and debt substitutes? : Evidence from Belgian firms. *Financial Management*, 28, 91-95.

De Vos, I., Everaert, G. & Ruyssen, I. (2015). Bootstrap-based bias correction and inference for dynamic panels with fixed effects. Working Paper. Ghent University, Belgium.

Dermiguc-Kunt, A. & Maksimovic, V. (1996). Stock market development and financing choices of firms. *World Bank Economic Review*, 341-371.

Eisfeldt, A. L. & Rampini, A. A. (2009). Leasing, ability to repossess and debt capacity. *Review of Financial Studies*, 22, 1621-1657.

Equipment Leasing Association of Nigeria (2015). Nigerian leasing industry hits ₦869 billion in 2014. http://www.elannigeria.org

Equipment Leasing Association of Nigeria (2016). Leasing in 2015- tough times, better performance. http://www.elannigeria.org

Erickson, S. M. & Trevino, R. (1994). A pecking order approach to leasing: The airline industry case. *Journal of Financial and Strategic Decisions*, 7 (3).

Etudaiye-Muhtar, O. F., & Ahmad, R. (2014). Banking Sector Development and Corporate Leverage: Empirical Evidence from South African Firms. *International Journal of Economics and Finance*, *6*(8), 278.

Ezzell, J. R. & Vora, P. P. (2001). Leasing versus purchasing: Direct evidence on a corporation's motivations for leasing and consequences of leasing. *The Quarterly Review of Economics and Finance*, 41, 33-47.

Fama, E. F. & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies*, 15 (1), 1-33.

Federal Inland Revenue Service, Nigeria (2010). *Guidelines on tax implications of leasing*. Information Circular, No. 2010/01.

Gill, B. S. (2014). Cross-country evidence on capital structure variability. Job Market Paper. Vrije Universiteit van Brussel.

Harris, M. & Raviv, A. (1991). The theory of capital structure. *Journal of Finance*, 46 (1), 297-355.

Jensen, M. C. & Meckling, W. (1976). Theory of the firm: Managerial behaviour, agency cost and ownership structure. *Journal of Financial Economics*, 3, 305-360.

Kang, S. & Long, M. S. (2001). The fixed payment financing decision: To borrow or lease. *Review of Financial Economics*, 10 (1), 41.

Kraemer-Eis, H. & Lang, F. (2012). *The importance of leasing for SME finance*. Working Paper, European Investment Fund Research & Market Analysis. Luxembourg.

Krishnan, V. S. & Moyer, R. C. (1994). Bankruptcy costs and the financial leasing decision. *Financial Management*, 23 (2), 31-42.

Lasfer, M. A. & Levis, M. (1998). Determinants of leasing decisions of small and large companies. *European Financial Management*, 4 (2), 159-184.

Lemma, T. T. & Negash, M. (2013). Institutional, macroeconomic and firm-specific determinants of capital structure.: The African evidence. Management Research Review, 36 (11), 1081-1122.

Li, F. Z. (2014). *An empirical analysis on the determinants of financial leasing: Evidence from public listed companies in mainland China.* Master thesis. National Sun Yat-sen University, China.

Malik, Q. U. Z., Saeed, R., Ahmed, R. & Javed, M. (2012). Firm characteristics and leasing tendency of Pakistan listed companies. *Middle-East Journal of Scientific Research*, 12 (8), 1149-1156.

Mehran, H., Taggart, R. A. & Yermack, D. (1999). CEO ownership, leasing and debt financing. *Financial Management,* 31 (3), 5-14.

Mendes, R. P. (2015). *The role of lease financing*. Msc dissertation, Universidade Catolica, Portuguesa.

Modigliani, F. & Miller, H. M. (1958). The cost of capital, corporate finance and the theory of investment. *American Economic Review*, 48, 261-297.

Modigliani, F. & Miller, M. H. (1963).Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53, 433-443.

Morais, I. A. (2013). Why companies choose to lease instead of buy? : Insights from academic literature. *Revista Latinoamericana de Administración*, 26 (3), 432-446.

Munga, F. A. & Ayuma, C. (2015). Factors influencing the use of lease financing in public institutions in Kenya: A case of the national treasury of Kenya. *International Journal of Science and Research*, 4 (3).

Mungami, S. E. (2013). *Determinants of lease financing decisions by non-financial firms quoted on Nairobi securities exchange, Kenya*. Ph.d. Thesis, Kenyatta University, Kenya.

Myers, S. C. & Majluf, N. S. (1984). Corporate financing decision where firms have information investors do not. *Journal of Financial Economics,* 13, 187-220.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5 (2), 147-175.

Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39, 574-592.

Neuberger, D. & Rathke-Doppner, S. (2012). *Leasing by small enterprises*. Thunen Series of Applied Economic Theory: Working Paper No. 122. Universitat Rostcok.

Oko, A. E. N. & Essien, E. E. (2014). The prospects and challenges of market segmentation practice in the equipment leasing industry of Nigeria, 2000-2013. *Journal of Business Theory and Practice*, 2 (1).

Oko, A. E. N. & Egwu, U. E. (2014). Impact of psychology of ownership of assets on lease consumption in Nigeria. *International Journal of Innovative and Applied Research*, 2(3), 47- 59.

Oko, A. E. N. & Isu, H. O. (2013). Strategies for lease volume enhancement: Study of the Nigerian lease market, 2001-2011. *International Business Research*, 6 (8).

Owoeye, I. (2004). Leasing law: ELAN takes case to senate In Leasing succour to manufacturers. *Leasing Today- A Quarterly Newsletter of Equipment Leasing Association of Nigeria*, 8 (1).

Pratheepkanth, P. (2011). Capital structure and financial performance: Evidence from selected businesses in Colombo stock exchange, Sri Lanka. *Researchers World Journal of Arts, Science and Commerce*, 11 (2), 171-180.

Rajan, R. & Zingales, L. (1995).What do we know about capital structure? - Some evidence from international data. *Journal Finance*, 50, 1421-1460.

Revised Guidelines for Finance Companies in Nigeria (2014). http://www.cenbank.org/.../OFIDcirculars.pdf

Robicheaux, S. H., Fu, X. & Ligon, J. A. (2008). Lease financing and corporate governance. T*he Financial Review*, 43, 403-407.

Filareto-Deghaye, M. C. & Severin, E. (2007). Determinants of the choice leasing vs bank loan: Evidence from the French SME by KACM. *Revista Investigación Operational*, 28 (2),120-130.

Sharpe, S. A. & Nguyen, H. H. (1995). Capital market imperfections and incentive to lease. *Journal of Financial Economics*, 39, 271-294.

Smith, C. W. & Wakeman, L. M. (1985). Determinants of corporate leasing policy. *The Journal of Finance*, 40 (3), 895-908.

Smith, C. W. & Warner, J. B. (1979). On financial contracting: An analysis of bond covenants. *Journal of Financial Economics*, 7 (2), 117-161.

Stojanovic, S. & Guzovski, M. (2013). The significance and role of leasing in corporate financing in republic of Croatia. *Interdisciplinary Management Research*, 9, 539-549.

White Clarke Group (2015). Global leasing report. http://www.whiteclarkegroup.com

White Clarke Group (2016). Global leasing report. http://www.whiteclarkegroup.com

Yan, A. (2006). Leasing and debt financing: Substitutes or complements? *Journal of Financial and Quantitative Analysis*, 41 (3), 709-731.

Zhou, L. (2014). Agency costs, CEO compensation and leasing activities. Phd Thesis, University of Arlington, Texas.

Appendices

STATA Output/Results

```
. xtset id fyear
       panel variable:  id (unbalanced)
        time variable:  fyear, 2007 to 2015
                delta:  1 unit

.
. xtreg finl prof lev find agency growthopp infasym finlar1 finlar2 ifrsadp, fe

Fixed-effects (within) regression               Number of obs      =       119
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.5055                         Obs per group: min =         7
       between = 0.2127                                        avg =       8.5
       overall = 0.2756                                        max =         9

                                                F(9,96)            =     10.90
corr(u_i, Xb)  = -0.7177                        Prob > F           =    0.0000

------------------------------------------------------------------------------
        finl |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        prof |  -.0023808   .0196488    -0.12   0.904    -.0413833    .0366218
         lev |  -.0151952    .002705    -5.62   0.000    -.0205646   -.0098259
        find |  -.0320406   .2819374    -0.11   0.910    -.5916819    .5276008
      agency |   .0047019   .0238371     0.20   0.844    -.0426144    .0520181
   growthopp |   .0713011   .0485733     1.47   0.145    -.0251163    .1677184
     infasym |  -3.101861   1.588379    -1.95   0.054    -6.254767    .0510457
     finlar1 |   .6902083   .1276287     5.41   0.000     .4368672    .9435493
     finlar2 |  -.2789722   .1384915    -2.01   0.047    -.5538756   -.0040687
     ifrsadp |   1.426515   .4878823     2.92   0.004     .4580761    2.394953
       _cons |   20.30746    10.0542     2.02   0.046      .350021     40.2649
-------------+----------------------------------------------------------------
     sigma_u |  2.4321858
     sigma_e |   2.013582
         rho |   .59333038   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(13, 96) =     2.57              Prob > F = 0.0043

. estimates store fixed

. xtreg finl prof lev find agency growthopp infasym finlar1 finlar2 ifrsadp, re

Random-effects GLS regression                   Number of obs      =       119
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.4620                         Obs per group: min =         7
       between = 0.4292                                        avg =       8.5
       overall = 0.4537                                        max =         9

                                                Wald chi2(9)       =     90.52
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
        finl |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        prof |   .0137225   .0153136     0.90   0.370    -.0162916    .0437366
         lev |  -.0093134   .0024201    -3.85   0.000    -.0140568    -.00457
        find |  -.1463544   .1973807    -0.74   0.458    -.5332135    .2405047
      agency |   .0001719   .0093704     0.02   0.985    -.0181938    .0185376
   growthopp |  -.0123021   .0462217    -0.27   0.790    -.1028949    .0782907
     infasym |  -.4414516   .3127216    -1.41   0.158    -1.054375    .1714716
     finlar1 |   .8072315   .1341456     6.02   0.000     .5443109    1.070152
     finlar2 |  -.2883257   .1389203    -2.08   0.038    -.5606045   -.0160469
     ifrsadp |   .5626725   .4376242     1.29   0.199    -.2950551      1.4204
       _cons |   3.568192   1.860222     1.92   0.055    -.0777766     7.21416
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |   2.013582
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store random
```

```
. hausman fixed random
```

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
prof	-.0023808	.0137225	-.0161033	.0123113
lev	-.0151952	-.0093134	-.0058818	.0012083
find	-.0320406	-.1463544	.1143138	.2013195
agency	.0047019	.0001719	.0045299	.0219181
growthopp	.0713011	-.0123021	.0836032	.0149308
infasym	-3.101861	-.4414516	-2.660409	1.55729
finlar1	.6902083	.8072315	-.1170232	.
finlar2	-.2789722	-.2883257	.0093535	.
ifrsadp	1.426515	.5626725	.8638423	.2156715

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 15.78
Prob>chi2 = 0.0717
(V_b-V_B is not positive definite)

```
. summarize finl prof lev find agency growthopp infasym finlar1 finlar2 ifrsadp
```

Variable	Obs	Mean	Std. Dev.	Min	Max
finl	123	1.068293	2.841981	0	25.47
prof	123	10.08065	15.13842	-35.23	83.14
lev	123	28.25179	89.38313	-540.33	255.09
find	123	1.781626	1.377573	-2.14	7.56
agency	123	18.22398	23.07653	0	84.44
growthopp	123	2.462764	5.283962	-18.03	33.42
infasym	123	6.526585	.8033126	4.97	8.38
finlar1	122	1.072131	2.853381	0	25.47
finlar2	121	1.076033	2.864918	0	25.47
ifrsadp	125	.536	.5007092	0	1

```
. xtreg finl prof lev find agency growthopp infasym finlar1 finlar2 ifrsadp, f
(running xtreg on estimation sample)

Bootstrap replications (50)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..................................................     50

Fixed-effects (within) regression               Number of obs      =       119
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.5055                         Obs per group: min =         7
       between = 0.2127                                        avg =       8.5
       overall = 0.2756                                        max =         9

                                                Wald chi2(9)       =     23.33
corr(u_i, Xb)  = -0.7177                        Prob > chi2        =    0.0055

                                   (Replications based on 14 clusters in id)
```

finl	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
prof	-.0023808	.0172163	-0.14	0.890	-.0361241	.0313626
lev	-.0151952	.0074366	-2.04	0.041	-.0297708	-.0006197
find	-.0320406	.260558	-0.12	0.902	-.5427248	.4786436
agency	.0047019	.0272868	0.17	0.863	-.0487793	.0581831
growthopp	.0713011	.0694511	1.03	0.305	-.0648206	.2074227
infasym	-3.101861	3.471266	-0.89	0.372	-9.905416	3.701695
finlar1	.6902083	.396943	1.74	0.082	-.0877857	1.468202
finlar2	-.2789722	.1907864	-1.46	0.144	-.6529066	.0949623
ifrsadp	1.426515	1.200275	1.19	0.235	-.9259806	3.77901
_cons	20.30746	21.82198	0.93	0.352	-22.46283	63.07775
sigma_u	2.4321858					
sigma_e	2.013582					
rho	.59333038	(fraction of variance due to u_i)				

```
.
```

```
. estat vif
```

Variable	VIF	1/VIF
find	1.71	0.584452
infasym	1.48	0.677804
growthopp	1.46	0.684469
prof	1.35	0.739843
finlar1	1.35	0.743315
finlar2	1.27	0.787729
lev	1.18	0.843941
ifrsadp	1.17	0.852166
agency	1.16	0.858384
Mean VIF	1.35	

Sample Firms

1. A.G. Leventis Nigeria Plc
2. Aluminium Extrusion Industries Plc
3. Ashaka Cement Plc
4. ABC Transport Plc
5. Chellarams Plc
6. DN Meyer Plc
7. Fidson Healthcare Plc
8. Livestock Feeds Plc
9. Morrison Industries Plc
10. Neimeth International Pharmaceuticals Plc
11. Pharma-Deko Plc
12. Thomas Wayatt Plc
13. Total Nigeria Plc
14. Vonofoam Plc