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EMPIRICAL TEST OF TRADE OFF THEORY AND PECKING ORDER THEORY AS DETERMINANTS OF CORPORATE LEVERAGE: EVIDENCE FROM A PANEL DATA ANALYSIS UPON NIGERIAN SMES

Yusuf Olatunji, OYEDEKO[1,*] & Muhammed ZUBAIRU[2]

[1]*Department of Banking and Finance, Faculty of Management Sciences, Federal University Oye Ekiti, Ekiti State, Nigeria.*
[2]*Department of Business Administration, Faculty of Administration, Ahmadu Bello University, Zaria –Nigeria.*

Abstract

The study examines Pecking Order Theory and Trade Off Theory as determinants of corporate leverage within a context of small and medium scale enterprises in Nigeria using Expos-facto research design. This study employs secondary data which were extracted from the audited financial reports of the listed small and medium enterprises within the period of the study for the period of eight years spanning from 2010 to 2017. The data were analysed using regression analysis. The study found that profitability and liquidity have positive effect on corporate leverage while firm size and growth have negative effect on corporate leverage.The study concluded that trade of theory has superiority on pecking order theory as regards to determinant of corporate leverage using data collected from financial statement of small and medium scale enterprises that are listed on the Nigerian stock Exchange. In view of this, the study recommends that small and medium enterprises should make use oflong term debt instead of short-term debt in there capital structure in financing investment opportunity in order to earn more profits. Also, other Islamic mode of financing such as mudaraba, ijara among others should be employed as an alternative ways of financing investment opportunity.

Keywords: *Pecking Order Theory, Trade off Theory, Regression analysis ,Leverage, SMEs*

JEL Classification: G32

1. INTRODUCTION

The word capital structure of a firm has been used to describe the way in which a firm raised capital needed to establish and expand its business activities. Capital structure is a mixture of various types of equity and debt capital a firm maintained resulting from the firms financing decisions. Ajao and Ema (2012) describe capital structure as the specific mix of debt and equity capital a firm uses to finance assets. They also emphasize that using this proportionate relationship; a company can decide whether to use debt, equity, or a combination of both debt and equity. The firm‘s decision about its source of capital will affect its competitiveness among its peers. Therefore, firm should use the appropriate mix of debt and equity that will maximize its profitability. Financial managers are facing difficulties

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

in precisely determining the optimal capital structure which minimise weighted average cost of capital and maximize the value of the organization. However, the level of debt financing that a firm uses in its capital structure is referred to as leverage. Leverage is a financing strategy designed to increase the rate of return on owners' investment by generating a greater return on borrowed funds than the cost of using the funds.

Leverage has a tax advantage which makes it cheaper than equity. The mix of cheap debt with relatively expensive equity reduces a firm's cost of capital, which is the cut-off rate for investment acceptance decisions. More so, the cost of debt is generally low as compared to equity due to the lower risk associated with debt as debt holders has the first claim in the case of insolvency (Damodaran, 1999). Debt also makes planning easy because interest cost on debt is usually fixed which allows efficient planning as the cost will be known. As long as the interest on debt is lower than the return that can be earned on the funds supplied by creditors, this excess return accrues to the owners of the firm as their benefit of using debt (Bernstein, 1993:610). This is known as the leverage effect of debt, and refers to the use of debt capital to minimize a firm's cost of capital and maximize its profitability. Leverage would be positive if return on assets (ROA) is greater than the before-tax interest rate paid on debt. Negative leverage occurs when a firm generates a ROA that is less than the before tax interest on debt (Damodaran, 1999). One of the assumptions of the Modigliani and Miller theory is that a firm's value is maximized when it employs more of debt in its capital structure than equity. They emphasised that when debt is used in the capital structure, the average cost of capital is reduced and profitability enhanced.

Apart from this assertion, there are vast number of theories that try to justify the use of leverage but among these theories,Pecking Order Theory (POT) and Trade Off Theory are the two most prominent theoretical frameworks which explain the corporate leverage behaviour. POT sequentially ranks the financing sources internal equity being the first preference where the firms avoid market attention, external debt as the second preference due to lower information costs associated with debt, and external equity being the last resort (Myers, 1984). On the other hand, TOT argues that corporate leverage behaviour is shaped by a well-defined target capital structure along with trade-off between costs and benefits of additional debt. The two competing frameworks have entirely distinct set of arguments and predict different corporate leverage behaviour of the firms, but it is difficult to adequately distinguish between the two (Fama& French, 2002).

In spite of the theoretical explanation of the relationship between financial leverage and profitability and other determinants, some empirical studies have also been documented such as (Salim&Yadav, 2012; Khan, 2012 among others) to confirm the assumptions of the theories, though there is no consensus among these studies because authors unanimously agreed on the direction of relationship between financial leverage and its determinants, as suchthis area of research remain afresh earnestly awaiting further investigation. In view of this, this study examines the Pecking Order Theory and Trade off theory as determinants of corporate leverage within a context of small and medium scale enterprises. In line with this objective the research question is stated as; does POT or TOT has superior view in explaining determinants of corporate leverage in small and medium scale enterprises in Nigeria? In consonance with this question, the hypothesis is formulated as; POT has no superior view in explaining determinants of corporate leverage in small and medium scale enterprises in Nigeria. To answer this question and test the formulated hypothesis, the remaining parts are structured thus: section two reviewed literature on determinants of corporate leverage, section three outlines the methodology adopted for the study. Data analysis and discussion were presented in section four while section five concludes the paper and proffer recommendations

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

2. LITERATURE REVIEW

This section presents the review of previous researchers' work on determinant of leverage. It presents the conceptualisation of the key variables used in the study. It also presents the theoretical and empirical foundation with a view to examining the determinants of corporate leverage.

2.1 Conceptualization Framework

2.1.1 Leverage

From the definitions given by many previous researchers, the amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered. An increase in financial leverage may bring better returns to some existing shareholders but its risk also increases as it causes financial distress and agency costs (Jensen &Meckling, 1976). The debt capital in a company's capital structure refers to borrowed money that is at work in the business. The safest type is long-term debt because the company has years, to pay both the principal and interest (Nawaz, Ali, &Naseem, 2011). However, the company could raise debt in a variety of ways which included borrowing funds from financial institutions or from public debt in the form of bonds (debentures) for a specified period of time at a certain interest rate (wakida,2011). All these are issued for the convenience of investors and company can use various bonds, loans and other forms of debt as source of financing.

The use of leverage can also give investors an idea as to the riskiness of the company compared to others, because riskier companies generally have a higher cost of debt. Lenders relatively demand lower returns because they take the least risk of any contributors of long-term capital so the cost of debt is lower than the cost of other forms of financing and the tax deductibility of interest payments lowers the debt cost. When a firm decides to use debt financing for its operations it's faced with a financial risk and it's referred to as a levered firm. Financial risk arises because debt has a fixed financing obligation usually in the form of interest which must be met when the obligation falls due before the shareholders can share in the retained earnings. The level of debt (financial leverage) that is acceptable for one industry or line of business can be highly risky in another, because different industries and lines of business have different operating characteristics (Gitman & Zutter, 2012). From the aforementioned explanation, the study considered the financial leverage from three perspectives which include total debt, long-term debt and short-term debt.

2.1.2 Determinants of Leverage

Many factors have been considered as determinants of leverage of firms in the previous studies, some of these factors are discussed below:

2.1.2.1 Profitability

Donaldson (1961) and Myers (1984) suggested that firms prefer using retained earnings, than debt and issuing new equity. This could be due to the asymmetric information or transaction costs involved. The past profitability of a firm and hence the amount of earnings available to be retained should be an important determinant of leverage because the pecking order theory stated that there is a negative relationship between profitability and debt

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

ratio. This is because when firms earn more profits, they will have more retained earnings which could be used to invest in new projects. However firms with low profitability levels would need to borrow more since their retained earnings will be insufficient to finance new projects. Hence this leads to an inverse relationship between profitability and leverage. On other hand the static trade off theory stated a positive relation between leverage and profitability. This is due to the advantage of tax shields where a tax shield in the form of interest deductibility may benefit firms to issue debt.

2.1.2.2 Firm Size

Leverage may be related to firm size. The costs of issuing debt and equity securities are also dependent on firm size. The costs incurred in issuing equity and long term debt would be higher for small firms than for larger firms. Hence this suggests that small firms may be less leveraged than large ones and may prefer short term debt to long term debt or equity due to the lower costs associated with short-term debts. Harris and Raviv (1991) also explained that leverage increases with size. This is similar with the results of Frank and Goyal (2004) that tested the pecking order theory of capital structure of publicly traded companies for the period 1971 to 1998. They defined size as log of sales. Their results provided evidence that firm size is critical and found a positive relation between size and leverage. According to Gansuwan and Önel (2012), there are many factors why smaller companies might obtain less external financing and thus having a lower leverage ratio compared to larger companies

2.1.2.3 Firm's Business Risk

Business risk in banking sector is one of the most important determinants of capital. Legal regulations specified the level of capital that banks must maintain with the level of risky investment they were involved. The main reason of this is that capital is viewed as a shield against unexpected losses and bankruptcy. Both agency and bankruptcy cost theories suggest the negative relation between the capital structure and business risk. The bankruptcy cost theory contends that the less stable earnings of the enterprises, the greater is the chance of business failure and the greater will be the weight of bankruptcy costs on enterprise financing decisions. Also, the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus, this theory suggests that as business risk increases, the debt level in the capital structure of the enterprises should decrease (Taggart 1985).

2.1.2.4 Growth

The assertive position of trade-off theory is that if retained earnings of high growth firms increase then firms should issue more debt to maintain the target debt ratio. Hence, a positive relationship exists between leverage and growth prospects. The pecking order theory supports this relationship as well. Myers (1984) suggested that the agency problem can be mitigated if the firm issued short term rather long term debt. Thus, this leads to a positive relationship between short-term debt and growth opportunities. However, Titman and Wessels (1988) argued that these agency costs will be higher for firms in growing industries since they have more flexibility in their choice of future investments. Hence expected future growths will be negatively related to long term debts. Although growth opportunities add

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

value to the firm, they do not generate current taxable income and cannot be collateralized but there could be a negative relation between debt ratios and growth opportunities.

2.1.2.5 Volatility of Earnings

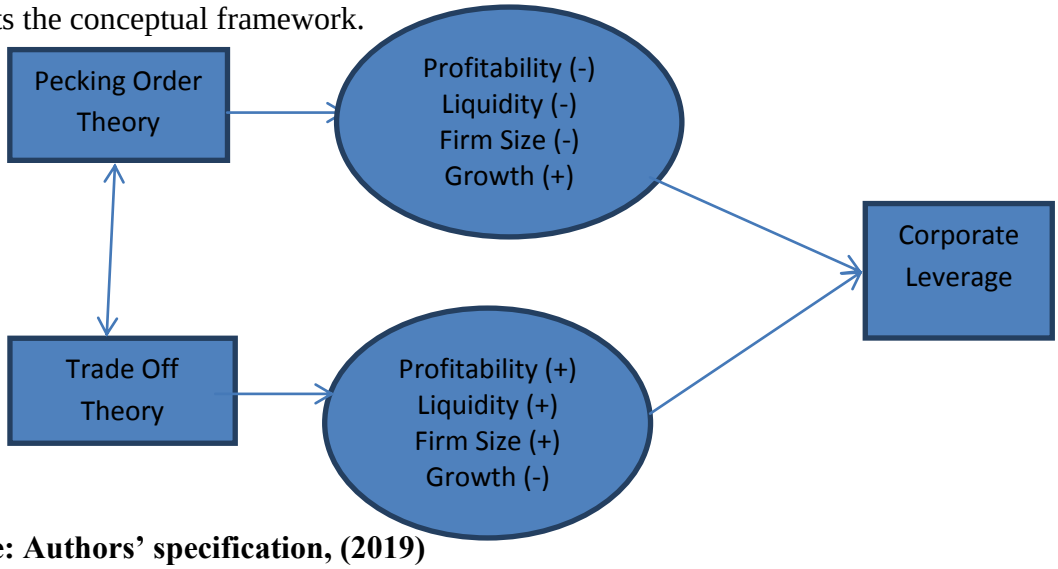
The volatility of earnings may have an impact on capital structures. Higher volatility of earnings increases the probability of financial distress, since firms may not be able to fulfil their debt servicing commitments. Thus, firm's debt capacity decreases with increases in volatility of earnings. This leads to an expected inverse relationship between leverage and volatility of earnings. Titman and Wessels (1988) thus suggested that a firm's optimal debt level is a decreasing function of the volatility of earnings.

2.1.2.6 Tangibility Assets

The degree to which firms' assets are tangible and generic should result in the firm having a greater liquidation value. Capital intensive companies will relatively employ more debt because their assets are pledged as collateral or arranging so that a fix charge is directly placed to particular tangible assets of the firm (Myers, 1977). Bank financing will depend upon whether the lending can be secured by tangible assets (Storey, 1994). Agency theory suggests that collateralized assets can be used as a monitoring instrument to control managers, and prevent threats of transferring wealth from debt holders to shareholders. Lenders require collateral since it is considered an explicit promise over debt. Therefore, a positive relationship is expected between tangibility asset and leverage level.

2.1.2.7 Firm's liquidity

Liquidity has various impacts on the capital structure choice. Firms with high liquidity may have high debt because of their ability to meet short-term liabilities which means a positive relationship between liquidity and leverage level. According to trade-off theory high liquidity position, for the firm's indicates that this firm's strong enough to face any short or long term financial problems, this strong firm can perform better than a weak firm which has weak liquidity position in its financial statements. The diagram below presents the conceptual framework.



Source: Authors' specification, (2019)

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

2.2 Theoretical Review

This section presents a review of theoretical literature upon which the study is anchored. It covers pecking order theory and trade off theory.

2.2.1 Pecking Order Theory

This theory is explained by asymmetric information between management and outsider investors because it encourages firms to prefer internal finance when funding their investments. This is line with the opinion of Myers (1984) and Myers and Majluf (1984) who suggest that capital structure choice is driven by the magnitude of information asymmetry present between the firm insiders and the outside investors. The more severe the information asymmetry, the more risk the outside investors are facing and hence the more discount they demand on the price of issued securities. Consequently, firms will prefer financing through internal funds and if there is need to source outside capital, they will firstly issue risk-free debt then followed by low-risk debt. Equity is only issued as a last resort or option because of the cost involved.

There are many reasons to prefer internal finance which include; it does not cause any separate costs and do not lower the controlling power of present stockholders either, in comparison to share issue; Internal finance also attract because firm is not obligated to predicate their use on financial market; Other aspect is based on thought that internal finance is concerned as "free capital", which may lead into inefficient investments from point of view of firm owners among others. Donaldson (1961) founded the pecking order theory when he conducted an interview survey of 25 large United States (US) firms, and concluded that management strongly prefers to use internal funds when available, and prefers not to use external sources of funds unless internal sources are unavailable. This study conform to the theoretical justification of Myers (1984) and Myers and Majluf (1984). They argued that information is the basis that managers and investors depend upon when making a decision regarding issuing equity or borrowing money. Managers will hesitate to issue equity if they feel that it is undervalued by the market. However, investors realise that managers will hesitate to issue new equity when it is under-priced. Thus, both managers and investors react according to their available information. Based on this argument, if managers tend to issue undervalued equity (low priced equity), the wealth will be transferred to the investors against the shareholders' benefits and wealth. In this situation, internal funds and debt will be preferred to equity. Myers (1984) referred to this as the 'pecking order theory' of financing.

In brief, this theory suggests that firms consider all the financing methods available and choose the least expensive option. This offers a framework that states that when financing new projects, firms first prefer to use internal equity, second prefer to use debt, and last prefer to use external equity. The pecking order theory predicts that high growth firms, typically with large financing needs, will end up with high debt ratios due to their managers' unwillingness to issue equity. However, Barclay, Smith and Morellec (2006) found that firms with consistently high growth use less debt in their capital structures. According to this explanation of the pecking order theory, it is expected that firms with high liquidity tend to use less debt because they are willing to use internal funds when these are available.

2.2.2 Trade-off Theory

As the name on theory also indicates, the idea of Trade-Off theory is to see an optimal compromise between equity and debt. Firms that obey this sort of thinking tries to equilibrate

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

between the advantages of debt, like the tax - deductibility of interests and disadvantage like direct and collateral costs of failure. Firms are striving for their goal of balance between debt and equity (Chirinko & Singha. 2000). In Trade-Off Theory, particular needs for investments and capital expenditures of each industry are taken into account when searching for optimal balance between debt and equity. Thus, each firm owns a theoretical optimum of debt rate that differs between firms' business nature. According to the theory, those firms with high amount of tangible assets and stable revenues, are tended to be financed with debt while firms with mostly intangible assets that could not be used as collateral are tended not be financed with debt.

The trade-off theory has become the most acceptable theory to explain optimal capital structure in the real world. It was developed as a response to the original theory of Modigliani and Miller, who maintained an initial stance that the financing decisions of firms do not affect their value, suggesting that firms with higher profits should use more debt, thus substituting debt for equity to take advantage of interest induced tax shields. However, Modigliani and Miller opinion, the theory points that high level of net income and high profitability should imply that firm should be capable to manage their commitments of debt and this conforms to what is obtainable in reality because high profitable companies tend to have less debt than less profitable companies as the former utilize the profits for financing.

2.3 Empirical Review

This section presents a review of relevant empirical evidences on financial leverage and profitability. It covers studies in developed, emerging, developing economies.

Rehman (2013) studied the relationship between financial leverage and financial performance in listed sugar companies of Pakistan. Secondary data were collected from the annual reports of the companies listed at Karachi Stock Exchange from the period 2006-2011. The results showed positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity. The study concluded that the use of debt may make a positive or negative impact on financial performance. However, the study did not give any recommendation at the end of the findings.

Murugesu (2013) examined the effect of debt on company's profitability during the 2008 to 2012. Eleven companies were selected form Hotel companies listed in Colombo stock Exchange as sample companies. Correlation and regression analysis were used to find out the effect of debt on corporate profitability. The study found that there were no significant relationship between debt and profitability. But based on the correlation analysis, there were strong negative relationship between short term liabilities, ROE and ROA. The study concluded that there was no significant relationship between long term liabilities, ROE and ROA. However, one the methodological weakness of the study is that the diagnostic tests were not carried out.

Anansasayanan (2013) analysed the determinants of leverage of the listed companies in Sri Lanka. The study made use of secondary data and covered the period of five years from 2007-2011 comprising of 60 companies and regression analysis was used. The results showed that financial leverage of Sri Lankan firms is influenced by firm size, firm growth rate and profitability. However, using a time scope of covering only five years is quite inadequate to make generalisations.

Kebewar, (2013) conducted empirical study on the impact of debt on profitability of companies. The study used secondary data were used in gathering the data which spans over

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

a period of 1999 to 2006. The study adopted the generalized method of moments (GMM) estimation model on a sample of 2325 firms. The study showed that the debt affects negatively the profitability, not only linearly, but also, in a non-linear (concave) way. However, while analyzing according to different size classes (VSEs, SMEs and LEs). The study found that the linear negative effect becomes larger and the non-linear effect is significant only in small and medium-sized enterprises (SME). The analysis of the study is well-detailed and was in line with the formulated research objectives and hypotheses.

Raza (2013) examined the determinants of capital structure of KSE listed none-financial firms for the period 2004-2009. The study used both regression panel data analysis and descriptive statistics on the selected variables. The results first hypothesis of the study showed negative relationship between performance and leverage**.** The result of second hypothesis shows no significance between leverage and profitability. On the basis of these findings, it was concluded that profitability is consistent with picking order theory. In the light of above discussion the study concluded that the existing theories of capital structure contribute to some extent in decision making process. The methodological weakness of this study is that the panel data regression was on only run on pooled regression without considering the fixed and random effect in the analysis.

Enekwe, Agu, and Eziedo (2014) conducted a study on effect of financial leverage on financial performance of the Nigeria pharmaceutical companies over a period of twelve years (2001 – 2012). The study employed ex-post facto research design. The secondary data were obtained from the financial statement of the selected pharmaceutical companies and ordinary least square regressions were employed. The results of the analysis showed that debt ratio (DR) and debt-equity ratio (DER) have negative relationship with Return on Assets (ROA) while interest coverage ratio (ICR) has a positive relationship with Return on Assets (ROA) in Nigeria pharmaceutical industry. The study recommended that companies' management should ensure that financial decisions made are in consonance with the shareholders' wealth maximization objectives which encompasses the profit maximization objective of the firm. The methodological weakness is the used of ordinary least square multiple regression instead the study should have used panel data regression analysis because this will allow the data to be subjected to time and cross sectional attributes and this will enable us to study innovation and performance of firms over time and as well as across the sampled quoted companies.

Barakat, (2014) investigated the effect of financial structure, financial leverage and profitability on industrial company's value. The study covered the period of four years spanning from 2009 – 2012. The study made use of multiple regression analysis. The study found that there is positive significant direct relationship between return on equity and capital structure. However, there is weak and inverse relationship between financial leverage and stock value. However, the study made use of four years data and this can prove inadequate to make generalisation.

Al-Tally (2014) conducted a research on the effect of financial leverage on a firm's financial performance. The study examined 57 publicly trading firms listed in the Saudi Arabian stock market between 2002 and 2010. The results of the study showed that, in the long term lower leverage levels tend to lead to higher profit margins and returns on both assets and equity. The study concluded that the way zakat is calculated and presented in firms' financial statements is currently vague. The study recommended that, under normal economic conditions, Saudi Arabian firms could attempt to improve their financial performance by balancing their zakat liabilities with their leverage borrowing levels. However, the study made use of ANOVA because of multi-dependent variable instead a more robust statistical tool of analysis should have been used such canonical regression analysis

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

which can be used to synthesised the multi-dependent variables and multi-independent variables

Wabwile, Chitiavi, Ondiek and Musiega (2014) conducted a research to analyse and compare performance amongst tier 1 commercial banks listed on NSE (that is banks with an asset base above 100 billion by the year 2011) in relation to their financial leverage. Person correlation analysis and regression analysis were used to test correlation of data, F-test, Durbin Watson test, adjusted R2, mean and standard error of the data. The study found a negative correlation between debt asset ratio and ROAC and ROCEC (-.642) and (-.494) respectively though not significant. The study concluded that debt ratio increases, the return on such assets as well as that on capital employed is reduced to cater for the outstanding liabilities. However, the study based some of its findings on the result of correlation which is a numerical measure which merely suggests the degree of linear association between two variables but does not explain the variation that one variable causes in another.

Shahzad, Ali, Ahmad, and Ali (2015) investigated the impact of financial leverage on corporate financial performance of Pakistan's textile sector from 1999-2012 using panel data. Regression analysis was performed with and without inclusion of financial crisis dummy. The results indicated that financial leverage has a negative impact on corporate performance when measured with ROA but in case of Tobin's Q, SDTA coefficient is positive. The study concluded that since cost of borrowing is high firms are forced to resort to banks as their source of debt finance and thus have to repay huge amount of principal and interest which has a heavy toll on their financial health. In addition to this, financial crisis was found to have a negative impact on corporate performance and also affect the leverage-performance relationship. As such the findings of this study was well detailed and in line with the objectives of the study.

Abubakar (2015) examined the relationship between financial leverage and financial performance of deposit money banks in Nigeria. The study adopted both descriptive and correlation analysis. The study found that there is no significant relationship between debt ratio and financial performance surrogated by ROE. The concluded that 84% of total assets of deposit money banks in Nigeria are financed by debts. The study recommended that an appropriate debt- equity mix should be adopted by banks if they must improve their financial performance, survive and remain competitive. However, the selection of sample size is not justified.

Kajirwa,(2015) examined debt structure and firm performance. The study was carried out using a longitudinal research design, employing secondary quantitative data for Five years (2010-2014). The data was obtained from Nairobi Securities Exchange Handbooks and Published books of accounts of the companies listed in the Nairobi Securities Exchange. Data was analysed by inferential statistics such Pearson product moment correlation and regression model. The study found that debt negatively affects firm performance though not statistically significant as measured by ROA (β = -.442, p-value =0.242 which is more than α = 0.05). The conclusion of the study was that the use of debt in a firms' capital structure negatively affects the performance of commercial banks in Kenya though not statistically significant. However, using a time scope covering five year is quite inadequate to make generalisation.

Vakilifard, and Askarzadeh (2015), examined the relationship between financial leverage and liquidity rank of industrial and manufacturing companies listed on Tehran Stock Exchange. The study used population of 163 companies whose information was available for a five-year period (2009-2013). A correlational design was used in this study; the analysis was also done by panel data. Regression analysis was used to test the hypothesis. The results indicated that firms with higher financial leverage enjoyed less liquidity. The study concluded that smaller companies had less liquidity as compared with medium-sized and

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

large companies. However, using a time scope of five years is quite inadequate to make generalisations.

Habib, Khan and Wazir, (2016) examined the impact of debt on profitability of companies in Pakistan .The study used panel data of 10 years, ranging between 2003- 2012. Random effect regression analysis is used to find out the impact of debt on profitability. The study found a significant but negative relationship between short term debt, long term debt, total debt, and return on assets. However, one the methodological weakness of the study is that the diagnostic tests were not proper carried out because it neglected some test like multicollinearity, heteroskedasticity among others.

From the literature reviewed, most of the studies were conducted in outside countries and few were documented in Nigeria and none of the study made collected data on SMEs in Nigeria. Therefore there is a research gap which propels this study. This research intends to fill the gap in the literature by examining the superiority between pecking order theory and trade off theory as regards the determinant of corporate leverage in Nigeria.

3. METHODOLOGY

A well-defined expos-facto research design is adopted in this study which is characterizes with quantitative or numeric description of historical data. The population the study comprises all the nine listed small and medium scale enterprises in Nigeria. The sample of the study is arrived at through census sampling technique. Thus, the sample of the study comprises of six out the nine listed small and medium scale enterprises in Nigeria. The study used six out because the six of them have their financial statement published till 2017. Secondary source of data are used. The data are panel data which are subjected to time and cross sectional attributes and this provides opportunity to have access to larger number of observations or large data points. This of course increases the degree of freedom (df) and at the same time decreases the possibility of multicollinearity among the included variables than cross-sectional or time-series data. The data are extracted from the audited financial reports of the small and medium scale enterprises in Nigeria within the period of the study. This source of data also has the advantage of being relatively more reliable since the financial statements have been audited by an independent audit firm. The study adopts descriptive statistics and regression analysis. The model specification for this study incorporates profitability, liquidity, firm size and growth as determinants of corporate leverage in line with the view of pecking order theory and trade off theory. The model is specified below:

$$LEV_{it} = \pi_0 + \lambda_1 \Pr of_{it} + \lambda_2 Liq_{it} + \lambda_3 Fsz_{it} + \lambda_4 Grt_{it} + \varepsilon_{it0} \quad \text{.....3.1}$$

$$LEV_{it} = \pi_0 + \lambda_1 \Pr of_{it} + \lambda_2 Liq_{it} + \lambda_3 Fsz_{it} + \lambda_4 Grt_{it} + \varepsilon_{it1} \quad \text{.....3.2}$$

$$LEV_{it} = \pi_0 + \lambda_1 \Pr of_{it} + \lambda_2 Liq_{it} + \lambda_3 Fsz_{it} + \lambda_4 Grt_{it} + \varepsilon_{it2} \quad \text{.....3.3}$$

This is moderately consistent with the regression equations developed by Akinlo, et al. (2012). Where LEV represents leverage, Prof represents Profitability, Liq represents Liquidity, Fsz represents firm size, Grt represents growth, e represents error term, λ_1- λ_4 represents coefficient of independent variables t represents time covered and i represents listed small and medium scale enterprises.

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

3.1 Variables and their Measurement and A priori Expectation

This section presents a summary of all the variables measurements, the source of the measurement and the a priori expectation. Table 1 is shown below:

Table 1: Measurement of Variables and A priori Expectation

Variables	Type variable	Measurement	Expected A priori		Source
			POT	TOT	
Profitability	Independent	Net profit before tax divided by total asset	-	+	Narmandakh, (2014)
Liquidity	Independent	Current liability dividend by current asset	-	+	Narmandakh, (2014)
Firm size	Independent	Logarithm of sales	-	+	Narmandakh, (2014)
Growth	Independent	(Total 44asset$_t$- Total asset$_{t-1}$)/ Total 44asset$_{t-1}$	+	-	Jarallah, Saleh, andSalim(2019).
Leverage	Dependent Variables	Total debt divided by total asset			

Source: Author's compilation, (2019).

3.2. Estimation Procedure

This subsection explains the models for testing and analysing the data collected for the study. The models employed for this study are static and dynamic models. The first step is to test the random effect regression against the pool regression using Godfery LM test and random effect regression against fixed effect using Husman test. This shall ascertain the static condition of the data series and provide the possibility of checking which of the model would be applicable. Also, the study conducts correlation matrix to check the correlation and problem of multicollinearity.

4. FINDINGS AND DISCUSSIONS

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
prof	.3240516	.7474079	-.3203077	2.978129
liq	2.071807	4.909225	.0011169	29.98804
fsz	8.812151	.8710866	6.90811	9.886477
grt	1.36069	7.189283	-.9852381	46.23642
lev	1.228837	1.944926	.1040176	7.729396

Note: Prof, liq, fsz, grt and lev represents: profitability, liquidity, firm size and leverage respectively.

Source: Author's computation, (2019)

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

The mean values of Prof, liq, fsz, grt and lev are .3240516, 2.071807, 8.812151, 1.36069, and1.228837 respectively. The common feature of these variables is that they all have positive mean values. This means that each of the variables displays increasing tendency throughout the sampling period. The average or mean value of the leverage is 1.22 which implies that the proportion of total debt of the small and medium scale enterprises in the capital structure is very high and the reason for this could be as a result of tax-shield benefit. The average value of liquidity is approximately 2. This average ratio is very high purporting that the liquidity position of small and medium scale enterprises is very high and this could be as a result of the nature of their businesses which requires cash transactions. The average value of firm size is 8 and this indicates growth in the asset of the small and medium scale enterprises. The growth rate is also high during the sampling period. Another characteristic that is observed is the range and standard deviation, growth has the largest range that is from -.9852381 to 46.23642 with associated standard deviation of 7.189283. This has explicitly revealed that growth is most volatile among the variables. The value of profitabilityranges from -.3203077 to 2.978129 with an associated standard value of .7474079 and this implies that profitability is the lowest volatile among the variables.

After the description of the variable, the study conducts correlation analysisthe existence of a perfect association between the independent variable and control variable. The result is presented in the table 3 below:

Table 3: Correlational Matrix

Variable	prof	liq	fsz	grt
prof	1.0000			
liq	0.6951	1.0000		
fsz	-0.7204	-0.6031	1.0000	
grt	-0.0674	-0.0578	0.1463	1.0000

Source: Author's computation, (2019)

The table 3 shows the correlation coefficients in-between each pair of the variables-profitability, liquidity, firm size and growth. The first column shows the correlation between profitability, liquidity, firm size and growth. The first pair has the correlation coefficient of 0.6951, the second pair has -0.7204 and the third pair has -0.0674. In the first column, profitability moves in the same direction with liquidity but moves in opposite direction with firm size and growth. The second column shows the correlation between liquidity, firm size and growth with correlation coefficient of -0.6031 and -0.0578. This implies that liquidity moves in opposite direction with firm size and growth. The third column shows correlation between firm size and growth with a correlation coefficient of 0.1463. Thus, there is evidence of moderate correlation coefficients, which invariably suggests that each pair of the variables is not perfectly correlated, and as such, the assumption of multicollinearity or perfect collinearity is refuted.Thus, there is absence of multicollinearity problem in our model.

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

Table 4: Diagnostic Test

	Statistic	Value
Panel A: BP LM	chibar2(01)	2.19
	Prob> chibar2	0.0493
Panel B: Hausman Test	chi2(2)	3.95
	Prob>chi2	0.0008

Source: Author's computation, (2019)

The test of the random effects model against the pooled regression model is conducted using Breusch and Pagan Lagrangian multiplier test. The test results are reported in table 4 shows that the test statistics is asymptotically large with 4 percent probability value. Therefore, at alpha value of 5 percent the null hypothesis that there are no panel effects is rejected. This suggests that random effects model appears to be more adequate or robust than the pooled regression model. To have a firm robust test, the researcher also tests the random effects against the fixed effects using hausman test. As indicated in the table 4.5 the test statistics are abysmally small and associated with large probability value of 0.0008. Thus, given the alpha value at 0.05, the null hypothesis that the individual effects do not correlate with the included variables can be rejected. This implies that the fixed effects model has appeared to be more adequate than the random effects model. The study therefore proceeds to estimate the fixed effects model.

Table 5: Regression Result (Dependent variable: Total debt ratio)

Variables	**Coef.**	**Std. Err.**	**z**	**P>|z|**
prof	1.075928	.2830072	3.80	0.001
liq	.0331538	.0271522	1.22	0.231
fsz	-1.659101	.5350593	-3.10	0.004
grt	-.0086567	.0138461	-0.63	0.536
cons	15.44352	4.770764	3.24	0.003
R-Sq	0.6913			
F(4,32)	17.92			
Prob> F	0.0000			

Source: Author's computation, (2019)

From the result, it is shown that profitability has positive and significant effect on leverage. This implies that unit increase in profitability will result into 1.07 units in leverage of small and medium scale enterprises. Liquidity has a positive but insignificant effect on leverage and this implies that a unit increase in liquidity will lead to 0.033 unit in leverage of small and medium enterprises. Also the result shows that firm size has negative but significant effect on leverage. This implies that a unit increase in firm size will lead to -1.65 units decrease in leverage of small and medium enterprises. The growth has a negative but insignificant effect on leverage of small and medium scale enterprises. A unit increase in the growth rate will decrease the leverage by .008unit. Also, the coefficient of determination reveals that 69.13%changes in leverage of small and medium enterprises can be explained by the independent variables (measured as profitability, liquidity, firm size and growth). The F-statistics from the regression is 17.92 with the p-value of zero and this reveal that the null

Corresponding Author: +2348061386774/+2348037861681
Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com

hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the model specified for the determinant of leverage is fit and generalization can be deduced from the result.

4.1 Discussion of Finding

The study found that there is positive and significant relationship between the profitability and leverage. This finding does not support the pecking order theory of capital structure which suggests that profitable firms initially rely on less costly internally generated funds before looking out for external finances. However, the finding is in consonance with trade off theory. The explanation for this could be as a result of the fact that small and medium scale enterprises service new project through their long term debt and this invariably increases their potential profit is therefore, expected that highly profitable Nigerian firms will require less leverage. Also, the finding is not line with the findings of Salim, and Yadav (2012), Habib, etal. (2016) among others but it conform to the finding of Qureshi (2009). From the result, it is explicit that there is positive but insignificant relationship between liquidity and leverage. This is does not conform to pecking order theory because it emphasises on negative relationship between liquidity and leverage. The theory argues that firms prefer to use their internal resources first. Firms with a high liquidity ratio would therefore use less debt but however, the result conforms to trade off theory. Also, the study shows a negative relationship between firm size and leverage. This does not conform to trade-off theory but it is in line with the argument of pecking order theory. The study also reveals that there is negative relationship between growth and leverage. This is in consonance with the trade-off theory.

5. CONCLUSION AND RECOMMENDATION

The study concluded that trade of theory has superiority on pecking order theory as regards to determinant of corporate leverage using data collected from financial statement of small and medium scale enterprises that are listed on the Nigerian stock Exchange. In view of this, the study recommends that small and medium enterprises should rely on long term debt instead of short-term debt in case of financing investment opportunity in order to earn more profits. Also, other Islamic mode of financing such as mudaraba, ijara among others can be an alternative for them. One of the limitations of the study is that, it is limited to small and medium scale enterprises, thus further studies in this area of research should focus on other sector of the economy in order to validate the findings of this study.

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Email: yusuf.oyedeko@fuoye.edu.ng/Zubairu3070@gmail.com