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IMPACT OF FIRM CHARACTERISTICS ON CAPITAL STRUCTURE OF QUOTED FINANCIAL FIRMS IN NIGERIA (2012-2023)

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Abstract: Poor financial structure of some firms has led to financial problems in firms. Similarly, firm characteristics has serious impact on the performance of the firm. The study therefore evaluated the impact of firm characteristics on capital structure of financial firms in Nigeria for the period 2012-2023. Ex-post facto research design was adopted for the study. Data extracted from the annual reports of the firms for the period of study were subjected to descriptive and inferential statistics. After some diagnostics tests and test for appropriate estimation technique, generalized random effect robust model was adopted. The result of the analysis indicates that firm size has positive and significant effect on firms' leverage of financial firms with a regression coefficient of 2.631 and p-value of 0.000. Profitability has positive but insignificant impact on leverage of financial firms in Nigeria having a regression coefficient of 0.543 and p-vale of 0.697 while firm liquidity has a negative but insignificant impact on firm financial leverage with regression coefficient of 0.248 and p-value of 0.445. The study recommends that financial firms should drastically reduce the level of dividend paid so as to have more retained earnings to reduce dependent on debt financing. For increase in profitability (ROA), use of debt financing should be considered, when necessary, as the firm would benefit from debt tax shield. This would enhance the overall firms' performance. Financial firms should strive towards maintaining or optimizing its liquidity as it has no significant impact on leverage of firms. This would ensure that there is no idle fund and invest as much as possible, as falling back on debt when faced with liquidity problem would not affect the profit performance.

Keywords: Firm characteristics, Capital structure, Financial firms, Nigeria.

Introduction

Company operations need accessible finance to function properly since it maintains the life force of their enterprise. A large number of new businesses terminate within their first few years because they lack adequate money. A company's survival rate together with its sustainability depends largely on the funding approaches it selects for both day-to-day operations and funding different investments. A company obtains funding from internal sources by retaining profit earnings as well as external channels through debt and equity submissions. Equity financing enables firms to create public stock offerings for raising revenue whereas debt financing occurs when businesses acquire money through bond and debenture issuance. The main goal of financial managers consists of two parts: they must discern the best financial resource combination for a company which will lead to shareholder wealth optimization and make informed investment choices to grow company value (Yakubu et al., 2016).

A firm reveals its capital structure through its selection of financial instruments to acquire funding. The mix of long-term debt along with specific short-term debt and common equity and preferred equity defines how firms obtain funding to finance operations through different financial instruments according to Ross et al. 2019. The debt-to-equity ratio represents the corporate capital structure to show debt versus equity allocation used by the firm. A company uses two fundamental financing approaches for long-term debt and stock funding which includes debt financing and equity financing through preferred stock and common stock.

Debt financing involves raising capital through borrowing (Ross et al., 2019). Companies can issue bonds, debentures, or take loans from financial institutions. The main benefit of debt financing occurs when the interest payments become tax-deductible reducing the total capital expenditure for businesses. Companies face increased financial risk because debt requires payments for interest in addition to principal repayment regardless of their financial results.

Firm attributes play a crucial role in determining the quality of earnings as they influence both internal and external decisions of the firm and help prevent managers from manipulating accounting information (Omar, 2013). A firm attribute refers to the internal environment of a company, which includes demographic and managerial variables that form part of this internal environment (Putri & Indriani, 2020). Understanding the concept of firm attributes is essential. According to Ologhodo et al. (2021), firm attributes are factors that are primarily under the control of management. These attributes include firm size, liquidity, sales growth and firms' profitability amongst others

Firm size describes the dimension of businesses through various measures including assets value alongside income production and stock market worth fluctuations alongside workforce numbers. Companies use firm size as a vital organizational characteristic which substantially affects how they operate their strategies and react in markets.

Large businesses produce more goods, which allows them to take advantage of economies of scale, which lowers their unit costs. These larger businesses typically attract better talent, have easier access to capital markets, and hold stronger market positions. Big businesses usually have a wide range of product lines and a wide market reach, which helps them spread risk throughout their operations and improve their financial stability (Ologhodo et al., 2021).

While there are certainly advantages to being a large firm, it also brings its own set of challenges, like increased bureaucracy and slower decision-making. Managing extensive operations can complicate things, making it harder to innovate quickly and adapt to changes. On the other hand, smaller businesses tend to be more agile, allowing them to respond swiftly to market shifts and build closer relationships with their customers. However, they often face their own hurdles, such as limited resources and weaker negotiating power, which can make them more vulnerable in a volatile market. To truly understand a company, it's essential to consider its size, as this plays a significant role in its market behaviour and strategic capabilities. When we talk about firm profitability, we're looking at how well a company can generate income compared to its revenue, assets, or equity over a certain period. Profitability is a key indicator of how effectively a company maintains its financial health and operational efficiency while achieving strong performance. Businesses often look at metrics like net profit margin, return on

assets (ROA), and return on equity (ROE) to gauge their profitability. A company's ability to generate financial gains is crucial for its ongoing growth and survival. It allows the business to secure funds for reinvestment and pay dividends to shareholders, making it more appealing to investors. When a business shows high profitability, it usually reflects effective management practices, market advantages, and a solid operational framework. Conversely, consistently low profitability can indicate operational inefficiencies, poor management, and challenges in navigating tough market conditions.

A company's profitability depends on a number of important factors. These include how well they control costs, their pricing strategies, the state of the market, and how efficiently they operate. Firms that keep a tight grip on their expenses, implement smart pricing tactics, and run their operations smoothly are generally in a better position to boost their profits. Additionally, market dynamics—like changes in demand, the level of competition, and broader economic trends—significantly impact profitability (Ologhodo et al., 2021). For stakeholders such as investors, managers, and analysts, grasping the nuances of firm profitability is crucial, as it sheds light on the company's current performance and its potential for future growth (Putri & Indriani, 2020).

Firm liquidity is all about a company's ability to handle its short-term financial responsibilities using its most liquid assets think cash or things that can be quickly turned into cash without losing much value (Brigham & Ehrhardt, 2021). When a company has high liquidity, it can easily pay off its current debts. On the flip side, low liquidity can signal trouble in covering those short-term obligations, which might put the company in a tough spot financially. That's why managing liquidity effectively is so important; it plays a big role in how well a company operates and its overall financial health. Companies that struggle with liquidity might find it hard to make urgent payments, which could lead to insolvency or having to sell off assets at less-than-ideal prices (Ross, Westerfield, & Jordan, 2019).

The method of funding through equity financing requires stock issuances to buyers who become shareholders (Brealey, et al., 2020). A company can create equity financing through both public and private financing methods. Equity financing provides companies with the advantage of not requiring regular payments because dividends are optional payments that businesses can adjust according to their profitability. However, equity financing dilutes ownership and control, and issuing new shares can signal to the market that the company might be overvalued or in need of cash

Companies choose to keep a portion of their net income instead of distributing it as dividends to shareholders as per Penman (2016). A company may finance its operations by keeping its retained earnings which enables it to pursue new projects and enhances debt management without external equity issuance or additional debt. Using retained earnings can be cost-effective and reflects a conservative approach to financing, as it relies on profits already earned. However, over-reliance on retained earnings may limit growth opportunities if external financing is more appropriate for larger investments.

Statement of Problem

One of the most important factors in the management of firms is the procurement of capital and its utilization to generate maximum return. While firms may have similar sources of funds and may even have the same amount at their disposal, they have different returns from the invested funds. This is related to various factors that affect

capital structure that may be considered in choosing an optimal capital structure target. Such factors are such firm characteristics like profitability, liquidity, and firm size among others. Poor firm profitability affects capital structure by increasing reliance on the debt component which invariably leads to a high cost of capital, reduced financial flexibility and increased bankruptcy risk (Brealey et al 2020, Damodaran, 2015, Myers, 2001and Graham & Harvey, 2001). Firm size affects capital structure as it helps in shaping a firm's capital structure as could be evidenced by access to capital market by large firms, cost of debt which is usually lower for large firms and diversification and stability, agency costs and regulatory and market perception (Rajan & Zingales, 1995; Frank& Goyal, 2009; Jensen, 1986 and Booth et al., 2001). Poor liquidity affects debt capacity, preference to debt financing, prone to financial distress, poor market perception and financial flexibility (Myers & Rajan, 1998; Graham, 2000, and Titman &Tsyplakov, 2007).

Several Nigerian companies have faced significant capital structure problems due to various firm characteristics such as poor profitability, excessive leverage, and liquidity issues. Such firm includes Intercontinental Bank (2009) as stated by Sanusi (2010); Cadbury Nigeria (2006) in Adeyemi (2012), African Petroleum Plc (2009) in Ujah, (2014) Etisalat Nigeria (now 9mobile) (2017) reports in Adediran (2017) and Skye Bank (2016) in Ogunmodede, (2018) and most recently, CBN revokes Heritage bank's license by Adaji (2024). Theoretically, works used Ordinary Least Square regression as against the panel regression technique as seen in the works of Mostafa et al. (2018) and Saber, et al. (2012). Also, the study in Nigeria was very scanty as well. The study tends to evaluate the impact of firm characteristics on the capital structure of quoted financial firms in Nigeria.

Objectives of the study

The main objective of this study is to evaluate the impact of firm characteristics on the capital structure of quoted financial firms in Nigeria. In specific terms, the study wants to:

1. Assess the impact of firm size on financial leverage of quoted financial firms in Nigeria
2. evaluate the impact of firm profitability on the financial leverage of quoted financial firms in Nigeria
3. Ascertain the impact of firm liquidity on financial leverage of quoted financial firms in Nigeria

Research Hypotheses

The following hypotheses guided the study:

Ho1: firm size has no significant impact on the financial leverage of quoted financial firms in Nigeria.

Ho2: firm profitability has no significant impact on the financial leverage of quoted financial firms in Nigeria.

Ho3: firm liquidity has no significant impact on the financial leverage of quoted financial firms in Nigeria.

REVIEW OF RELATED LITERATURE

Agency theory

Berle Adolf A and Means Gardiner C. (1932) formed the basis to Agency Theory authored by Jensen Michael and Meckling William in 1976. Berle and Means (1932) and Jensen and Meckling described how managers (agents) differ in interests from owners or shareholders (principals) of companies. During periods of professional management evolution and company expansion managers frequently choose personal objectives that could diminish shareholder value. The authors Berle and Means (1932) noted that managerial positions enable exploitation which diverts assets away from shareholder wealth maximization. Jensen and Meckling (1976) built

upon these ideas by explaining how ownership separation from control creates interests' conflicts between managers and shareholders. Agency costs were introduced, it refers to the expenses incurred while trying to harmonize managerial interests with those of ownership according to Jensen and Meckling (1976).

This encompasses various costs, such as monitoring expenses, bonding costs, and the losses that occur when their goals diverge, to address these issues, companies often implement different agency control mechanisms. These might include performance-based compensation, strong corporate governance practices, and oversight from the board of directors. Sanda et al. (2005) pointed out that this theory is essential for keeping top executives accountable by uncovering any fraudulent activities they may engage in. When shareholders establish oversight mechanisms, they can better align managers' goals with the company's broader objectives, which ultimately helps to reduce agency costs. According to the Agency Cost Hypothesis, financial leverage can play a role in lowering agency costs. When a company has high levels of debt, it creates pressure on managers to focus on generating cash flow to meet those obligations. This pressure can lead to actions that are more in line with shareholder interests. Berger et al. (1997) argue that firms with significant leverage may be better positioned to minimize conflicts between managers and shareholders, thereby reducing agency costs. This alignment can enhance the firm's performance and increase its overall value. Agency theory, which posits that companies with leverage can more effectively tackle agency conflicts compared to those without it. Moynihan et al. (2021) suggest that firms with substantial leverage are more likely to resolve disputes between shareholders and managers, particularly regarding investment decisions. The board of directors plays a crucial role in governance, overseeing managers and ensuring they act in the best interests of shareholders. Generally, a larger board is associated with better oversight. Typically, a larger board is linked to improved oversight, as it enhances the capacity to effectively monitor managerial actions.

Agency Theory explains the effect of firm characteristics on capital structure by relating how divergent interest among managers, owners and debt holders influence operations financing decision.

Empirical Review

Effiong and Ukpong (2024) examined the impact of firm characteristics on financial leverage, focusing on industrial goods firms listed on the Nigerian Exchange Group. The primary objective was to assess how various firm characteristics influence the financial leverage of these firms. The independent variables representing firm characteristics included firm size, firm profitability, asset tangibility, market value, and the combined effect of these characteristics. Financial leverage served as the dependent variable. An ex-post-facto research design was utilized. The study population consisted of 13 listed industrial goods firms, but after excluding firms that did not meet the criteria for inclusion, a sample size of 12 firms was selected. Data for the period 2013 to 2022 were obtained from the annual reports and financial statements of the sampled companies. The analysis involved descriptive statistics, correlation, and panel regression using E-Views statistical software version 10.

The Hausman test results indicated that firm size had a negative and non-significant impact on financial leverage. Firm profitability, however, showed a positive and significant impact on financial leverage. Asset tangibility had a positive but non-significant effect, while market value demonstrated a negative and non-significant effect on financial leverage. The combined effect of firm characteristics was found to have a significant influence on

financial leverage. Based on these findings, the study concluded that firm characteristics significantly affect the financial leverage of industrial goods firms in Nigeria. Consequently, it was recommended that firms should expand their operations by increasing liquidity and utilizing it efficiently to achieve economies of scale. Additionally, firms should ensure their asset base remains proportionate to their business investments for effective and efficient management.

Robby (2021) conducted a research study on Firm Size and Financial Leverage of Firms: A Study on Kenyan Sugar Firms in Kenya to determine how study variables relate to each other by using the Pearson product moment correlation coefficient. The statistical correlation (r) determination along with its significance level were evaluated. This statistical analysis needed to meet significance at alpha = 0.05. All financial leverage indicators displayed negative relationships with firm size according to statistical analysis (p values below .05) where debt ratio correlation reached -.348 (p=.002) debt to equity ratio correlation reached -.358 (p=.001). The study measured firm size through natural log of average yearly sales revenue while using debt ratios as debt calculation indicators.

Using data from 101 listed Nigerian firms spanning 2003 to 2007 Ibhagui et al. (2018) analyzed how firm performance reacts to leverage changes based on company size. The Hasan (2014) threshold regression model enabled the researcher to study leverage-firm performance relationships by analyzing a novel threshold variable based on firm size. The research investigated if an optimal firm size exists where leverage produces positive business performance results. Results demonstrated that leverage impacts business performance exclusively in small businesses but this negative effect diminishes while firm size increases. This result proves valid no matter which debt ratio measurement method is used. The research indicates that leverage produces positive results for Tobin's Q in the Nigerian market of listed firms similarly to previous academic findings. The latest research discovered firm size influences the degree of positive correlation so small businesses demonstrate higher levels of connection.

Deloof (2015) evaluated financial leverage among Nairobi Securities Exchange companies by studying their firm size and profitability and sales volume. This research explores how firm size impacts the financial leverage of Nairobi Securities' listed companies by creating a complete analytical structure built from trade off and pecking order theory. A census survey investigated the complete list of 64 firms trading on the Nairobi Securities Exchange between 2010 and 2014. Financial leverage evaluation occurred through the application of the debt-to-equity ratio. Regression analysis together with Pearson’s Product Moment Correlation analysis served as the methods to test the variables. The listed companies underwent descriptive statistical analysis alongside an examination of study variable main characteristics. The investigation demonstrated a statistically significant correlation between corporate dimensions and financial leverage metrics. An intricate and robust connection emerged between corporate scale and debt financing levels.

Abdulkarim et al. (2020) analyzed financial leverage decision-making influences on diversified firms through business complexity and external funding requirements and growth prospects on the Nigerian capital market. The researchers dedicated ten years from 2008 to 2017 to perform their comprehensive study of six listed diversified companies. The research relied on the Ordinary Least Squares (OLS) robust model combined with descriptive

statistics, correlation matrix, and panel data analysis for its data examination. Listed diversified firms operating in Nigeria experience positive and significant effects on their financial leverage from business complexity and growth opportunities. The analysis showed that dependent financing results in a substantial negative impact on financial leverage. The recommendation for listed diversified companies implies achieving the best capital structure through business operations that avoid linked revenue streams between departments. Their business growth and profitability improvement potentials become more reachable through this strategic method.

The effect of firm characteristics on capital structure of Nigerian listed deposit money banks was studied by Nguyen (2020). A research was performed by using twelve years (2008-2019) of time series secondary data collected from ten (10) audited banks listed on the stock exchange floor. The researchers applied multiple linear regressions together with Pearson moment correlation and descriptive statistics. The performed correlation analysis demonstrated that firm capital structure had a negative impact on profitability. The panel regression results demonstrated profitability to have a negative connection with firm capital structure levels although statistical significance was absent.

Another study by Serwadda (2019) examined how capital structure affected Ugandan banks' profitability over a ten-year span, from 2006 to 2015. The impact of capital structure on bank profitability is ascertained through the use of panel regression models. The findings indicate that capital structure and bank performance are positively correlated.

Nwude and Anyalechi (2018) conducted research to evaluate the performance impact of capital structure on Nigerian commercial banks. Research investigated two vital factors affecting commercial bank performance while examining debt-to-equity ratio relationships in financial resources. The researchers applied four different methods to assess their gathered data. These included ordinary least squares regression, correlation analysis and fixed/random effect panel analyses and Granger causality analysis as well as post-estimation tests both the Hausman test and the restricted f-test for heterogeneity. Debt financing creates negative effects on return on assets while the debt-to-equity ratio establishes a significant positive connection with return on equity.

Kachollom et al. (2017) conducted research on capital structure effects in Deposit Money Banks across Nigeria by studying financial reports from Nigerian Stock Exchange-listed banks. Researcher chose four banks as their samples which they analyzed for a ten-year period extending from 2006 to 2015 using financial statements data. The GLS regression model together with Pearson correlation provided insights into how capital structure affects the financial success of these bank institutions. The authors used ROA and ROE and ROCE to evaluate performance outcomes. Financial metrics of Nigerian listed deposit money institutions demonstrate a significant positive relationship with their capital structure.

The study by Khan (2012) on capital structure decisions and firm performance by employing the panel Pooled Ordinary Least Square regression technique on 36 engineering firms and their data from the Keysians Stock Exchange (KSE) for the period of 2003–2009. The analysis shows that Return on Assets (ROA) alongside Gross Profit Margin (GM) and Tobin's Q experience negative significant changes from the firm's usage of short-term debt to total assets (STDTA) and total debt to total assets (TDTA).

Several business organizations based at the Tehran Stock Exchange underwent financial performance evaluation according to Pouraghajan and Malekian (2012). The financial performance of 400 firm-years during 2006-2010 for 12 industrial groups of Tehran Stock Exchange companies was analyzed through this research. Company financial performance can be evaluated through two primary ratios that include ROE and ROA. Their analysis demonstrated that debt ratios show negative and significant relations with business financial performance while asset turnover, firm size, asset tangibility ratio and growth prospects demonstrate positive and significant correlations with financial performance metrics. Research results demonstrate that ROA and ROE measurement variables show no relationship with company age.

Sitdang et al. (2023) examined how business factors affect industrial companies that are listed on the Nigerian stock exchange. Profitability together with liquidity and non-debt tax shield and growth opportunities and cost of equity were specific factors in the analysis. Industrial companies listed in Nigeria were sampled through purposive techniques before their data underwent fixed and random effect regression model analysis. Research data pointed to profitability acting as a negative influence on the debt-to-asset ratio measurement used by industrial companies. The debt-to-asset ratio decreases by 61.5% when profitability increases by a single unit. According to research findings industrial companies should implement policy measures that create positive financial cash flow and effectively use profits to minimize the non-important relation between current assets and physical asset value in determining their financing structure.

In the same vein, Farajim, et al (2020) carried out a study on the Firm attribute and liquidity management among firms in West Africa. The study covers the period of ten years ranging from 2009 to 2018. The study adopted an ex-post facto design and used panel data Collected. Population comprises of all the listed industrial goods firms on the Nigerian Stock Exchange from 2009-2018 and 14 industrial goods firms as a sample. Liquidity management as dependent variable and firm attribute as independent variable with Firm size, leverage and Firm age as proxies. The study finds that firm attribute affects about 36 percent of the level of liquidity management. That is, about 36% of the level of liquidity management among companies in Nigeria and Ghana can be attributable to their firm attribute.

Mohammed and Hamza (2020) explored the profitability impact of return on assets through the assessment of liquidity and financial leverage effects in "The Impact of Liquidity and Financial Leverage on Profitability: The Case of Listed Jordanian Industrial" paper. This research analyzes annual reports from five years (2015-2019) of the Amman Stock Exchange industrial sector companies. The authors downloaded the reports from each company's website. The research used Version 19 of the Statistical Package for the Social Sciences (SPSS). The research found that financial leverage has negative effects on profitability levels of Jordanian industrial listed enterprises but liquidity shows beneficial effects. The research focused on profitability enhancement for all industrial listed Jordanian companies because this aspect stands as their essential priority. The regulators may find the results helpful in proposing new laws and rules for the Amman stock exchange and the Financial Ministry.

Onyekwelu et al. (2018) conducted a study on Firms' corporate financial indicators and operational performance of selected firms in Nigeria. The study examined the firm-specific characteristics that impact on equity returns on manufacturing firms listed on the Nigeria Stock Exchange from 2012 to 2016. The panel data regression analysis

was adopted to test the relationship between firm characteristics and leverage. The study indicated that liquidity, growth opportunity, profitability has negative impact on leverage while firm size and asset tangibility indicated positive and significant effect on leverage.

Annalien studied in 2010 the ways firm characteristics influence capital structure decisions for non-financial companies listed on the Dares Salaam stock exchange of Tanzania from 2005 to 2016. This research analyses secondary data obtained from selected non-financial listed companies as well as the Tanzanian stock market through annual financial reports. The data analysis incorporates descriptive statistics and regression analysis together with correlation analysis as statistical methodologies. The study reveals a negative connection between firm short-term and total leverage and firm profitability and size and liquidity and industry type which demonstrates statistical significance at 5% confidence level. The organizational success level directly correlates to lower leverage usage by firms. Due to financial conditions in the study area most organizations use bank loans as their main short-term financing source which leads to smaller companies having higher debt levels. Additionally, the more liquid a firm is, the lower the leverage.

MATERIALS AND METHODOLOGY

The study adopted *ex-post facto* research design. A total of forty-five (45) financial firms listed at the Nigeria Exchange Group formed the basis of this study. Thirty nine (39) financial firms were drawn as sample size through a filtering technique that dropped some firms that were not in continuous operation since 2012 or that did not have the necessary data.

Data for this research came from annual financial reports of quoted financial firms which between 2012 and 2023.

RESULTS AND DISCUSSION OF FINDINGS

Random-effects GLS regression

Table 1: Random-effect GLS Regression (OLS Robust)

	Robust		
FL	Coef.	Z	P >[z]
LFSZ	2.631	6.75	0.000
FPRT	0.543	0.39	0.697
FLQ	-0.248	-0.76	0.445
FAG	-0.005	-0.15	0.882
_Cons	-16.880	-8.10	0.000
Wald chi2 (4)	92.40		
Prob > chi2	0.000		

Researchers' computation (STATA 15), 2025

Table 1 reveals that the model performance is good through its Wald Chi2(4) value of 92.40 which achieves a p-value of 0.000. The research shows firm size creates a positive and statistically important impact on the FL of financial organizations in Nigeria. The examined period revealed that financial performance risk tolerance produced a positive yet marginal impact on the financial leverage of Nigerian financial firms. The impact of FLQ

and FAG proves negative yet negligible when determining the financial resource location decisions of Nigerian financial firms.

The decision analysis demands the rejection of the null hypothesis only when p-value reaches or exceeds 0.05 and adoption of alternative hypothesis instead yet p-values above 0.05 need to keep null hypothesis intact and eliminate alternative hypothesis.

HO: Firm size has no significant impact on the financial leverage of quoted financial firms in Nigeria.

From table 1, firm size has a positive and significant impact on financial leverage of financial firms in Nigeria with regression coefficient of 2.631 and p-value of 0.000. Since the p-value is less than 0.05, the null hypothesis is rejected and the alternative which states that firm size has significant impact on the financial leverage of quoted financial firms in Nigeria is accepted.

HO_2: Firm profitability has no significant impact on the financial leverage of quoted financial firms in Nigeria.

Table 1 demonstrates that firm profitability (ROA) positively affects financial firm leverage in Nigeria but these findings are statistically insignificant since the regression coefficient equals 0.543 and the p-value amounts to 0.697. The results with a p-value higher than 0.05 support the null hypothesis which leads to the conclusion that firm profitability does not affect financial leverage measurements of quoted financial firms in Nigeria.

HO_3: Firm liquidity has no significant impact on the financial leverage at quoted financial companies in Nigeria.

The result of data analysis as shown in Table 1 indicates that FLQ has a negative but insignificant impact on firm FL with regression coefficient of -0.248 and p-value of 0.445. Since the p-value is more than 0.05, the null hypothesis which states that firm liquidity has no significant impact on the financial leverage of quoted financial firms in Nigeria is accepted.

Effect of firm size on financial leverage

The analysis proves that firm size demonstrates a substantial connection with the financial leverage adopted by listed financial firms operating in Nigeria. The results demonstrate that firm size creates a positive major effect on financial leverage in Nigeria's financial sector with 2.631 as the regression coefficient and a p-value of zero.000. This pattern demonstrates that firms with bigger size also possess greater leverage which leads them to move together. The financial leverage system of firms increases by 2.63 units each time their organizational size rises by one unit. Most of the firms obtain debt financing for their assets. This is in agreement with study of Deloof (2015) whose analysis indicated positive effect of firm size on financial leverage of firms in Nairobi stock exchange. However, the result of data analysis is at variance with that of Robby (2021) whose study revealed a negative impact of firm size on financial leverage of Kenya Sugar firms.

Effect of firm profitability on financial leverage

Profitability (ROA) has positive but insignificant impact on leverage of financial firms in Nigeria as it has a regression coefficient of 0.543 and p-value of 0.697. This means that profitability and leverage moves in the same direction thus, a unit increase in return on asset might lead to 0.54 percent increase in firm leverage. This implies that debt component of financing is used in financing the business opportunities that would lead to increase in profitability of list Nigerian financial firms. This aligns with theappriori expectation in which financial firms usually deal with money and banks for instance rely mostly on deposit from individuals and corporate

bodies in financing their operations. This agrees with M & M theory as firms borrow and benefit from debt tax shield and Peckings order theory in which firms resort to borrowing to finance opportunities once share capital and retained earnings are insufficient and the investment would result in a positive Net Present Value (NPV). The findings are in agreement with the result of the works of Serwadda, (2019) and Kachollom et al. (2017) while it is at variance with that of Nguyen (2015), Nwude and Anyalechi (2018) who found a negative impact of profitability of capital arrangement.

Effect of firm liquidity on financial leverage

Firm liquidity (FLQ) exhibits a negative yet unimportant relationship with firm financial leverage (FL) according to the regression coefficient of -0.248 and the p-value of 0.445. The upward movement of financial liquidity results in a downward effect on financial leverage so that increasing firm FLQ leads to decreasing FL. A unit increase in FLQ would result in -0.248 reduction in FL. This in line with the apriori expectation as a firm becomes liquid, there is reduced tendency for borrowing. The finding is in agreement with that of Annalien (2010).

Also, the control variable, firm age has negative impact on firm leverage having a regression coefficient of -0.005 and p-value of 0.882. This implies that as firm age increases, the debt financing reduces. This is in line with apriori expectation as firm tends to exhaust its investment /expansion as the firm grows/ years pass by thereby reducing the tendency for debt financing.

Conclusion

The study evaluated the impact of firm characteristics on capital structure of quoted financial firms in Nigeria. It evaluated the impact of firm size, firm profitability and firm liquidity on firm leverage of quoted financial firms using firm age as a control variable. The study revealed positive effect of firm size and firm profitability on the firms while firm liquidity indicated a negative effect on the firm of study. The study concludes that firm characteristics/attribute impact on the capital structure of the firms although the impact is varied from one variable to the other.

Recommendations

The study recommends that:

1. Debt reduction should be prioritized by financial firms through lowered dividend payments because this strategy would optimally utilize their retained earnings.
2. To achieve higher profit (ROA), the use of debt financing should be considered when necessary as debt tax shield will benefit the company. The overall performance of the firm will also improve
3. Under this provision firms should focus on keeping or optimizing their financial liquidity while firm leverage levels would not be affected. The approach allows for no ideal fund along with maximum investment because relying on debt in liquidity crises will not disturb profit performance.

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RESULT OF DATA ANALYSIS

```
  /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   15.0   Copyright 1985-2017 StataCorp LLC
  Statistics/Data Analysis             StataCorp
                                       4905 Lakeway Drive
     Special Edition                   College Station, Texas 77845 USA
                                       800-STATA-PC        http://www.stata.com
                                       979-696-4600        stata@stata.com
                                       979-696-4601 (fax)

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                       University of Cape Town

Notes:
      1.  Unicode is supported; see help unicode_advice.
      2.  Maximum number of variables is set to 5000; see help set_maxvar.

. import excel "C:\Users\DELL\Desktop\Contracts\orthorpedic\esien data.xlsx", sheet("Shee
> t1") firstrow

. xtset ID Year
       panel variable:  ID (strongly balanced)
        time variable:  Year, 2012 to 2023
                delta:  1 unit
```

Variable	obs	Mean	Std. Dev.	Min	Max
F1	468	3.089322	10.17985	-86.74439	177.337
L_FSZ	468	7.681861	1.12398	5.58	10.6
PRT	468	0.013	0.1594728	-1.88	1.13
FLQ	468	0.7110334	0.9038904	0.0001672	10.5059
FAG	468	19.97391	11.88742	2	54

	F1	L_FSZ	PRT	FLQ	FAG
F1	1.0000				
L_FSZ	0.3123	1.0000			
PRT	0.0338	0.1119	1.0000		
FLQ	-0.0932	-0.2370	0.0470	1.0000	
FAG	0.1448	0.4141	0.0729	-0.1526	1.0000

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	Fl	L_FSZ	PRT	FLQ	FAG
Fl	1.0000				
L_FSZ	0.3123	1.0000			
	0.0000				
PRT	0.0338	0.1119	1.0000		
	0.4691	0.0161			
FLQ	-0.0932	-0.2370	0.0470	1.0000	
	0.0468	0.0000	0.3172		
FAG	0.1448	0.4141	0.0729	-0.1526	1.0000
	0.0018	0.0000	0.1184	0.0011	

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
L-FSZ	468	0.92031	24.966	7.707	0.00000
PRT	468	0.56089	137.572	11.795	0.00000
FLQ	468	0.61191	119.929	11.458	0.00000
FAG	468	0.92541	23.278	7.538	0.00000

Variable	VIF	1/VIF
L_FSZ	1.27	0.787580
FAG	1.21	0.824734
FLQ	1.07	0.934298
PRT	1.02	0.978123
Mean VIF	1.14	

```
Ramsey RESET test using powers of the fitted values of Fl
       Ho:  model has no omitted variables
                 F(3, 445) =      0.63
                  Prob > F =      0.5957
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of Fl

         chi2(1)      =    44.10
         Prob > chi2  =   0.0000
. xtunitroot fisher PRT, dfuller lags(0)
(18 missing values generated)

Fisher-type unit-root test for PRT
Based on augmented Dickey-Fuller tests
---------------------------------------

Ho: All panels contain unit roots           Number of panels       =     40
Ha: At least one panel is stationary        Avg. number of periods =  11.55

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
------------------------------------------------------------------------------
                                  Statistic      p-value
------------------------------------------------------------------------------
 Inverse chi-squared(80)   P       416.5132       0.0000
 Inverse normal            Z       -12.4633       0.0000
 Inverse logit t(199)      L*      -17.8227       0.0000
 Modified inv. chi-squared Pm       26.6037       0.0000
------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------
```

```
Fisher-type unit-root test for FLQ
Based on augmented Dickey-Fuller tests
---------------------------------------
Ho: All panels contain unit roots           Number of panels       =     39
Ha: At least one panel is stationary        Avg. number of periods =  11.67

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
------------------------------------------------------------------------------
                                  Statistic      p-value
------------------------------------------------------------------------------
 Inverse chi-squared(78)    P       216.0916       0.0000
 Inverse normal             Z        -5.2494       0.0000
 Inverse logit t(194)       L*       -7.4508       0.0000
 Modified inv. chi-squared  Pm       11.0562       0.0000
------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------


Fisher-type unit-root test for L_FSZ
Based on augmented Dickey-Fuller tests
---------------------------------------
Ho: All panels contain unit roots           Number of panels       =     40
Ha: At least one panel is stationary        Avg. number of periods =  11.55

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
------------------------------------------------------------------------------
                                  Statistic      p-value
------------------------------------------------------------------------------
 Inverse chi-squared(80)    P       112.2835       0.0101
 Inverse normal             Z         4.3783       1.0000
 Inverse logit t(204)       L*        2.6571       0.9957
 Modified inv. chi-squared  Pm        2.5522       0.0054
------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------
```

```
Fisher-type unit-root test for FAG
Based on augmented Dickey-Fuller tests
---------------------------------------

Ho: All panels contain unit roots           Number of panels       =     40
Ha: At least one panel is stationary        Avg. number of periods =  11.50

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
------------------------------------------------------------------------------
                                  Statistic      p-value
------------------------------------------------------------------------------
 Inverse chi-squared(80)    P         0.0000       1.0000
 Inverse normal             Z              .            .
 Inverse logit t(4)         L*             .            .
 Modified inv. chi-squared  Pm       -6.3246       1.0000
------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------


Fisher-type unit-root test for L_FSZ
Based on augmented Dickey-Fuller tests
---------------------------------------

Ho: All panels contain unit roots           Number of panels       =     40
Ha: At least one panel is stationary        Avg. number of periods =  11.55

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
------------------------------------------------------------------------------
                                  Statistic      p-value
------------------------------------------------------------------------------
 Inverse chi-squared(80)    P       112.2835       0.0101
 Inverse normal             Z         4.3783       1.0000
 Inverse logit t(204)       L*        2.6571       0.9957
 Modified inv. chi-squared  Pm        2.5522       0.0054
------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------
```

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```
Breusch and Pagan Lagrangian multiplier test for random effects

        Fl[ID,t] = Xb + u[ID] + e[ID,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                      Fl |    105.4577       10.26926
                       e |    87.98747       9.380163
                       u |    8.114934       2.848672

        Test:   Var(u) = 0
                                 chibar2(01) =    11.91
                              Prob > chibar2 =   0.0003
```

Hausman test

```
                 ---- Coefficients ----
                |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                |    fixed       random       Difference          S.E.
----------------+----------------------------------------------------------------
          L_FSZ |   1.332042     2.63077      -1.298728        1.93798
            PRT |   .6671201      .54273         .12439       1.155669
            FLQ |  -.0935769    -.2479807       .1544038       .5018007
            FAG |   -.230002    -.0053861      -.2246159       .1574314
----------------------------------------------------------------------------------

                           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(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         6.93
                Prob>chi2 =       0.1398
```

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```
Random-effects GLS regression                   Number of obs     =         453
Group variable: ID                              Number of groups  =          39

R-sq:                                           Obs per group:
     within  = 0.0001                                         min =           8
     between = 0.4314                                         avg =        11.6
     overall = 0.0961                                         max =          12

                                                Wald chi2(4)      =       92.40
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =      0.0000

                                    (Std. Err. adjusted for 39 clusters in ID)
```

Fl	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
L_FSZ	2.63077	.3897476	6.75	0.000	1.866879	3.394661
PRT	.54273	1.394421	0.39	0.697	-2.190286	3.275746
FLQ	-.2479807	.3244261	-0.76	0.445	-.8838442	.3878828
FAG	-.0053861	.036216	-0.15	0.882	-.076368	.0655959
_cons	-16.87953	2.084517	-8.10	0.000	-20.96511	-12.79396
sigma_u	2.8486723					
sigma_e	9.3801635					
rho	.08444049	(fraction of variance due to u_i)				