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## The Environmental Contingencies, Capital Structure and Firm Performance of Listed Firms

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# The Environmental Contingencies, Capital Structure and Firm Performance of Listed Firms

## Abstract

*Going concerns of business empires is predicated on the externality effect of environmental contingencies that influence the decisions of capital users. And the capability of capital users to circumnavigate both macro and micro environmental contingencies which cumulate to shareholders' wealth maximization is crucial. Hence, the study aims of dissecting effect of macro and micro environmental contingences on the capital structure and firm performance. Generalized Method Moment (GMM) statistical tool is used to dissect perceived association amidst endogenous and exogenous variables. The results show that micro contingences such debt to equity, debt to assets and short-term liability have negative and statistically significant on firm performance and long-term debt to equity has positive and statistically significant influence on the firm performance. On the other side macro contingences such as lending interest rate, foreign exchange rate, and gross domestic products have negative and statistically influence on the performance of the firm while, inflation rate, foreign direct investment and fuel importation have positive and statistically impact of the performance. The dynamism of result also reveals of short run and long run consequence. Therefore, the study concludes due to mutuality or interdependency of both micro and macro environmental contingencies, they have impacted on the capital structure and performance of listed companies under the purview of this study. This shows that capital managers are not insusceptible by their controllability and capability of micro contingencies (capital structure/ internal forces) but, rather the macro/external contingencies have inroad to impacted the micro /internal forces directly or indirectly.*

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## Keywords

Dynamism, Environmental contingencies, Macro, Micro contingencies, Interdependency

## Cover Page Footnote

Abdulkarim, U. F., Nurudeen, S. O., & Faruk, B. U. (2022). Moderating Role of Government Intervention on The Relationship Between Interest Rate And SMES Performance; Implication On Poverty Alleviation In Zamfara State. *Academy of Accounting and Financial Studies Journal*, 26(4), 1-19. Abdullah, H., & Tursoy, T. (2023). The effect of corporate governance on financial performance: evidence from a shareholder-oriented system. *Iranian Journal of Management Studies*, 16(1), 79-95. Akintoye, I. R. (2008). Effect of capital structure on firms' performance: the Nigerian experience. *European Journal of Economics, Finance and Administrative Sciences*, 10(1), 233-243. Ahmad, Z., Abdullah, N. M. H., & Roslan, S. (2012). Capital structure effect on firms performance: Focusing on consumers and industrials sectors on Malaysian firms. *International review of business research papers*, 8(5), 137-155. Alrutbi, M., Hovey, M., & Yarram, S. R. (2016). Determinants of bank credit growth in Australia: Effects of securitisation and the Global Financial Crisis. Alti, A. (2006). How persistent is the impact of market timing on capital structure?. *The Journal of Finance*, 61(4), 1681-1710. Antwi, S., Mills, E. F. E. A., & Zhao, X. (2012). Capital structure and firm value: Empirical evidence from Ghana. *International Journal of Business and Social Science*, 3(22). Ashamu, S. O., Abiola, J. O., & Bbadmus, S. O. (2012). Dividend policy as strategic tool of financing in public firms: Evidence from Nigeria. *European Scientific Journal*, 8(9). Bessler, W., Drobotz, W., & Grüninger, M. C. (2011). Information asymmetry and financing decisions. *International Review of Finance*, 11(1), 123-154. Boshnak, H. (2022). The impact of capital structure on firm performance: evidence from Saudi- listed firms. *International Journal of Disclosure and Governance*, 1-12. Dada, A. O., & Ghazali, Z.

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## 1. Introduction

One of the consequences of incorporated firms is the empowerment to raise finances from the public to finance its operations. This could be in terms of debts or equities, thus known as capital structure. Capital structure explains the blending of equity, preference stock and bonds. These are finances which have longevity of terms. Hence, management decision on the ways and manners capital of any firm should be structured is very crucial and also a critical success factor of business firms, because it has been affirmed that the value of a corporate entities can only be maximized if only the cost of such capital is minimized. Thus, the capital structure of any firm could be at optimal when there is appropriate mix or combination of debt-equity achieved. This will minimize the corporate's cost of capital which invariably maximize its performance in term of return on the investment and value addition (Antwi, *et al.*, 2012; Mills, & Mwasambili, 2022).

The above assumption could not be guaranteed, due to the fact that, firms cannot operate in isolation without no due cause to environmental contingences in which firms are operating from. There are diver's environmental contingences that can impair or improve corporate firm activities. Firms operates within country economic situation that is dynamic and unpredictable due to macroeconomics and microeconomics variables that are uncontrollable by capital users, but any dysfunctionality definitely has adverse influence of the capital structure and firm performance.

One of the environmental dynamism occurrences was global financial crisis (GFC) in 2007, the externalities of this global financial crisis hit hard on global economic trade and investments, Nigerian economy inclusive (Alrutbi, *et al.*, 2016). This GFC emanated in the USA, the severity of this crisis firstly affects housing bubble in US before it spreads across countries in the globe. Several negative externalities emanated from the global financial crisis impacted Nigerian economy range from foreign direct investment (FDI) declines, falls in credit facilities available in financial sector, declines in aggregate demand, decline in Nigeria foreign exchange reserves, merger and acquisition of banks. Other macroeconomics variables are not insulated from negative effects such as inflation on the high side, interest rate, foreign exchange rate fluctuation, decline in share price of investment. All these are interdependent variables that cumulated and resulted to unprecedented economic recession.

Several empirical studies have dissected the impact of environmental contingences on capital structure and firms' performance (Ashamu & Abiola, 2012; Sanusi, 2011 Ikechukwu, 2016), but these investigated studies still left inexhaustible areas, these studies concluded that the environmental have impacted negatively on capital structure of sectors of Nigerian economy with underscore firms in any sectors cannot operate in isolation of others sector of the Nigerian economy without due course to the activities of capital structure. The statement of problem is that financial institutions are the intermediaries between the surplus units and deficit units of any economies. This they do by providing credit facilities to needed individuals and corporate entities (deficit units) through customers' liabilities (surplus units). Hence, the services of these financial institutions to the corporate entities are a function of capital users' decision on the nature of the capital mix needed in their firms. But this decision cannot be made without considering the externalities factors that are capable of influencing capital structure decision. The spillover of environmental contingences on corporate entities of any economy could also have aftermath effect

both directly and indirectly on the structure of capital possessed and productivity of such firms., therefore, the study aims of examine the influence of environmental contingences on capital structure and firm's performance, secondly, the study is to investigate the effect of microeconomics and macroeconomics governances on the capital structure and firm performance.

The rest of the study is structured as follows: next section deals with the review of related and relevant literature. Secondly, methods to be used is domiciled in section three. Thirdly, the results are presented in the section four and section five houses the conclusion and recommendations.

## **Literature Review and Hypotheses Development**

### **Empirical review**

The extant literature has shown that the relationship between total debts to asserts (leverage) were inconsistent and conflicting conclusions. Quite a lot of studies have discovered nexus between leverage and firm performance (Nguyen et al., 2021; Pham, 2020)

According to Nguyen and Nguyen, (2020); Nguyen *et al.*, (2021) and Rajan and Zingales, (1995) examined firm performance vis-à-vis capital structure, the results shown that firm performance were not detrimental to long-term, short-term total debt ratios. Le and Phan, (2017) considered the total debt, long term debt, and short-term debt, book and market measures of gearing are detrimentally associated with firm performance when measured by ROA, ROE, and Tobin's Q.

Boshnak, (2022) investigated the impact of capital structure on firm performance: evidence from Saudi-listed firms. The study dissects 350 firms of non-financial listed firm between 2016-2020. General method moment (GMM) was used to estimate the data. The results show that short-term, long-term, total debt and debt-to-equity ratios all have a significant adverse effect on firm performance (ROA). In other side long-term debt, total debt and debt to equity have such an effect on firm performance (ROE).

Iqbal, and Islam, (2022) dissect the nexus between capital structure and firm performance in Pakistan, with the focus of using accounting performance metrics to proxy firm performance. The scholars conceptualized the endogeneity of the variables used by employing GMM statistical estimator to dissect 285 non-financial firms, for the period of 21 years. The result revealed leverage has a detrimental influence on the corporate performance.

These studies have evident that there divert influences of capital structure have on the producibility of the capital users. But these studies have not found out the controllability and predictability of capital user in relations to divergent results evident from the extant literature. Hence, this study is aimed to investigate the ability of capital users to navigate or weather the environmental contingencies in order to achieve optimal capital structure that will maximize the owners' wealth

### **Theoretical review**

In the corporate economy, there are three corporate ways of financing business of companies, first, retained earnings, equities and debts (Myers & Majluf 1984). The mix of debt and equity constitute capital structure. It is assumed that the value of a firm can be maximized, if only the cost of capital is at barest minimum value. Since the inception of dissimilar researches on capital structure, there

are four cogent theories associated with it. Firstly, the trade-off theory propounded by Modigliani and Miller (MM) (1958) opined that corporate firms achieve optimization level of leverage with the existence of corporate liability (debt). Secondly, irrelevance theory, thirdly, pecking order theory, and lastly, Market timing theory, and they are discussed in turns.

**Trade-off theory:** The theory assumes that the capital users must ensure to strike balance between debt financing and equity financing, through the instruments of cost of capital and benefit derivable from the capital. The crux of the theory was hinged on the philosophy of (Kraus, Litzenberger, & Ramaswamy, 1979). They consider a balance between the dead-weight cost of bankruptcy and the tax saving benefit of the debt financing, which a time metamorphose to agency cost. This theory is being used in corporate entities to explain mixture methodology of proportion of debt financing and the proportion of equity financing that will result in minimizing agency cost and maximizing shareholders value. Theory further explains advantages of debt financing which is the tax benefits of debt and there is associated cost of liquidation cost. Lastly, the issue of the marginal benefit is further explaining that additional increases in debt declines as debt financing increases, while the marginal cost increases, so that a corporate firm is at optimal of its overall value. Based on the philosophy of this theory, decision of capital users should be the mix of finances that will be appropriate is minimizing cost of such finance that will enhance and maximizing shareholders wealth, hence, this study is hinged on the trade-off theory.

**Irrelevance theory:** This theory is considered as the zero point of modern capital structure theories. The theory explains the behaviour of capital users and capital owners. It assumes that the value of corporate firms is unaffected by irrespective of the manner at which capital users do the mixture of the debt financing and equity financing. According to MM (1958) infers that the theory has no optimization peck of proportion of debt financing and proportion of equity financing, hence, capital structure is irrelevant for the shareholders wealth maximization. This was philosophized by MM (1958) in their seminal presentation and opined that the value of high geared corporate firms is same as ungeared corporate firms. Thus, it was proposed that capital users should not be bothered about the mix of equity financing and debt financing, they should purposively use their mind to select the best composition between equity to debit financing. It was further assumed that any incremental in leverage of company, it brings about an incremental in associated risk of the firm and as a result the cost of equity financing increases, conversely the weight average cost of capital (WACC) remain constant as the cost of debt financing compensate with high cost of equity.

Based on this theory, the size of mixture of the finances is irrelevance to the capital structure and productivity of companies. This suffices that externalities existed within countries' economies cannot influence the decision of capital users as relate to capital structure and the performance of such firms.

**Pecking order theory:** This theory postulates that asymmetric information stimulates the cost of financing options to increase. The options of these financing are prioritized in this order, first preferring retained earnings, debts and raising new finance through issue of shares as last resort. The theory adherent of the hierarchy of source of finances. The theory prefers retained earnings first, when this exhaustible and unavailable, the next option is debt is preferred to equity. The theory is popularized in 1984 by Myers and Majluf (1984), they argue that issue of new share

(equity) is rank less prefer source of raising corporate capital by capital users, who are privileged to insiders' information, that is asymmetric information than the capital owners. The issuance of new equity by the capital users made the capital owners believe that the capital managers is taking the advantage of overvalued share in capital market, rather the capital owners will place a lower value to the new equity issuance. Pecking order theory is hinged on the asymmetric information as capital users are privily informed about the company's prospects, value and risk associated than the outsider capital owners. Hence, oscillation among the internal and external financing and debt is predicated on the capital user's information asymmetric.

**Market timing theory:** According to Baker and Wurgler, (2002) postulate that this is also capital structure theory that explain that corporate entity issues new shares when the existing share price is overvalued or overrated and the company buy back shares when the share price is understated or underrated. The oscillation in the share price due affect the option of corporate finance models and decisions and invariably affect the structure, finance structure of such firms. Additional Baker and Wurgler (2002) elucidates that the theory is cogent with the pecking order theory of capital structure. The market timing theory do not change to target leverage as equity transactions are completely time to stock market conditions. This implies that capital structure changes persuaded by market timing are long lasting (Bessler *et al*, 2008). The assumption of the theory explains that gearing ratios are negatively related to the past stock returns (Bessler 2004) and Welch (2004) found that the most important determinant of capital structure is the stock returns. However, Hovakimian (2006) stated that market timing does not have a significant effect on the firms' capital structure in the long run. Confirming the same Alti (2006) shows that impact of market timing on gearing will entirely fades within two years.

In summary, theories that underpin capital structure have elucidated above, where trade-off theory explains the connection between options of finance and the effect on the firm value. Irrelevance theory opines that oscillation between level of finance mixture is unaffected to the firm values, while pecking order theory prioritizes and ranks the three options of financing based on information asymmetric, lastly, market timing theory explain the effect of overstated and understated share price, which engender the capital users to embark on issuance of new equity. These theories have explained the phenomena of capital structure and firm value, but the study aims at predicting these theories by dissecting empirically. Hence, the study is to examine the effect of capital structure of firm as its affect their value or performance and the effect of environmental contingences as its affects firm value or performance.

Environmental contingences encapsulate factors or forces that insert and exert either favorable or unfavorable influences on business vision, mission, and developmental strategy, having fully understanding about environmental contingences, this should be prioritized by capital users. The acknowledgement of both positive and negative effects within and without the company, capital users can proactively devices suitable strategies to handle any predicted and unpredicted situation.

Environmental contingences are grouped in divergent manners, such as macro and micro environmental contingences, external and internal environmental forces, and uncontrollable and controllable environmental factors. Environmental contingences made up of external and internal contingences. Then, external contingences are conceptualized as forces without the company

control the insert and exert control on company activities, which are considered as opportunities and threats. The internal contingences refer to forces or factors that are within company insert and exert control. These are considered as strengths and weaknesses.

Macro-environmental contingences are externalities that impact or influence the operationalization of business either positively or negatively which are uncontrollable by capital users, such as lending interest rate, inflation rate, foreign exchange rate, foreign direct investment, fuel importation rate.

### **Lending interest rate:**

Lending interest rate or interest rate is the amount charged by financial institution for a certain period as a percentage of the amount of credit facility. This is the cost on the credit facility paid by debtors. The interest rate is the cost of debt for the borrower and the rate of return for the lender. The difference between the total repayment sum and original loan is the interest charged. This is one of external environmental contingence that impact the operation of firm performance. The uncontrollability and unpredictability are the uniqueness of macro-environmental contingences in the hand of capital users. When capital users paid higher lending interest rate, this will affect the firm performance by decrease the return of investment and visa verse. Hence, lending interest rate is macro environmental contingences which is uncontrollable and unpredictable by capital users (Abdulkarim, et al, 2022; Safitri, & Oktavia, 2022; Wardhani, et al., 2022)

### **Inflation rate**

Inflation is the decline in the purchasing power of a given currency in a specific time. A quantitative estimate of the rate at which decreasing in purchasing power occurs can be reflected in the increase of an average price level of a basket of selected goods and services in an economy over some specific period of time. The rise in prices, which often expressed as a percentage, means that a unit of currency effectively buy less than it did in prior periods. This is another macro environmental forces that the managers lack the controllability and predictability. Hence, the capital users ensure capability and strategically position the firm to navigate the uncontrollable and unpredictable influence of inflation rate to enhance optimal capital structure and firm performance.

### **Foreign Exchange Rate**

Foreign exchange rate depicts a global market of swapping or trade off national currencies with one another. This window comprises the largest securities market in world economic market. It is also macro environmental contingences that managers has absolute no capability to control or predict the upsurge. The capability to impact the capital structure and firm performance cannot be overemphasized

### **Foreign Direct Investments**

FDIs are substantial investments made by corporate entity into a foreign country. The investments here are huge and the quantumness of such investment in foreign counties is a function enablement



of the environment of the host counties. The controllability and expectedness are not within the reach of management of the corporate resources.

*H<sub>A</sub> 1: There are statistical and significant effect of capital structure metrics on firm's performance.*

*H<sub>A</sub> 2: There are statistical and significant effect of macroeconomics variables on the firm's performance*

### 3.0 Methodology

The population of the study is 151 listed companies in Nigerian Exchange Group (NGX), samples are collected through the purposive sampling technique. In order to take data useable on the basis of some criteria, the data used are obtained from [www.machemrations.companies.site](http://www.machemrations.companies.site) The study sources data used from five-eight (58) listed companies in Nigerian Exchange Group (NGX). The periods cover from 2006 to 2020, the choice of this period is to see the trend of oscillations of capital structure and performance and its behaviour with the dynamism of macroeconomics variables

#### Model specification

The GMM model for the study is stated below: Endogenous repressor:

$$Y = \alpha Y_{it} + \beta X' + \gamma \beta + \epsilon_{it} \dots \dots \dots (1)$$

Y and X' are N x 1 vectors;  $\alpha$  is a K x 1 vector of unknown parameters;

X is a N x K matrix of explanatory variables (X' : Explanatory variables,

$\beta$  : control variables;  $\alpha$ : coefficient)

Where: Y<sub>it</sub> is dependent variable? Y<sub>it</sub> = is the lagged of dependent variable and its parameter

X' = explanatory variables and its parameter it  $\beta$  = control variables and its parameter

$$roe_{it} = \alpha_0 + \alpha_1 L.roe_{1-t} + \alpha_2 ltdeq_{it} + \alpha_3 deeq_{it} + \alpha_4 deass_{it} + \alpha_5 stl_{it} + \alpha_6 lir_{it} + \alpha_7 erus_{it} + \alpha_8 ir_{it} + \alpha_9 fdius_{it} + \alpha_{10} fi_{it} + \alpha_{11} gdpus_{it} + \alpha_{12} fsize_{it} + \epsilon_{it}$$

where:

roe = return on equity performance metric

L.roe = lagged value of return on equity

Capital structure variables

ltdeq = long term debt to equity

deeq = debt to equity

deass = debt to assets

stl = short term liability

macroeconomics variables

lir = lending interest rate

erus = exchange rate \$

ir = inflation rate

fdius = foreign direct investment \$

fi = fuel importation

gdpus = gross domestics product \$

control variable

fsize = firm size

$\bar{U}_0$  = constant of the model

$\bar{U}_1 - \bar{U}_{11}$  = coefficients of the parameter of the model

$\mathcal{E}$  = stochastics term

$\dot{i}$  = ith of performance, capital structure and macroeconomics variables

t = number of periods under review

Apriority expectation:  $\bar{U}_1, \bar{U}_2 \dots \bar{U}_{11} \geq 0$

**Table 1** **Variables operationalization**

Variables	Metrics	Measurement	Reference
Dependent variable			
Accounting performance	Return on equity ROE	Net income- preferred dividend/ Total equity	
Independent variables of capital structure			
Capital structure	LTDEQ	Long term debt/Equity	Riaz, et al., (2022)
Capital structure	DEEQ	Total debt / equity	Riaz, et al., (2022)
Capital structure	DEASS	Total debt/ assets	Riaz, et al., (2022)
Capital structure	STL	Current liability /current assets	Riaz, et al., (2022)
Independent variables of Macroeconomics variables			
Lending interest rate	LIR		Holstead, C., Kalay, A., & Sadka, G. (2022)
Exchange rate in US dollars	ERUS		Holstead, C., Kalay, A., & Sadka, G. (2022)
Inflation rate	IR		Holstead, C., Kalay, A., & Sadka, G. (2022)
Foreign direct investment in US dollars	FDIUS		Holstead, C., Kalay, A., & Sadka, G. (2022)
Fuel importation	FI		Holstead, C., Kalay, A., & Sadka, G. (2022)
Gross domestic product in US dollars	GDPUS		Holstead, C., Kalay, A., & Sadka, G. (2022)

**Source: Authors' Compilation (2022)**

## **Data Analysis Technique**

The dynamic panel data of Generalized Method of Moment (GMM) estimator used which is efficient in control some OLS assumptions that are capable to make result to be spurious when violated BLUE (Best Linear Unbiased Estimator) attributes of regression are fractured where these assumptions are violated. The capability of GMM estimator is effective to control some of these underpin problem of data such as endogeneity of the lagged of explained variable in the dynamic panel data model, where there is association between the explanatory variables and stochastic term of any model, omitted variables bias, unobserved panel heterogeneity, serial autocorrelation of data and measurement errors in data. These are some of the data-oriented problems that GMM estimator is capable to resolve, minimize and eliminate completely. Especially, this study is considering the behavior of capital structure and macroeconomics variables (Adeusi, 2021; Haron, 2018; Raithatha & Komera, 2016 and Sheikh et al., 2018).

## **4.0 Result of Analyses and Discussion of Findings**

### **4.1 Descriptive statistics**

Table 2 shows the descriptive statistics of different performance metrics, capital structure metrics and macroeconomics variables metrics. This is done on the basis of yearly basis of the average values of these metrics. These average values of the variables were dissected below with different forms diagrammatical analyses such as waterfall chart and line graphs

Table 2

## Descriptive statistics - mean by (year)

	FIRMS' PERFORAMNCE					CAPITAL STRUCTURE METRICS						MACROECONOMICS VARIABLES					
	ROE	ROA	ROS	EPS	RESH	LTDE	DEE	DEASS	SAGT	FSIZ	STL	LIR	ERUS	IR	FDIUS	FI	GDPUS
2006	42.853	7.952	1.765	1.062	39.474	49.479	-2.006	71.494	.	6.585	1.274	16.893	128.652	8.225	-4.535e+09	2.871	1656.425
2007	-.245	6.699	5.599	1.602	41.933	188.955	13.74	71.34	840.323	6.722	1.181	16.939	125.808	5.388	-5.168e+09	1.776	1883.461
2008	54.266	6.453	5.104	1.578	44.244	909.74	17.801	65.565	41.248	6.855	1.284	15.136	118.567	11.581	-7.143e+09	1.586	2259.114
2009	22.72	5.142	2.600	1.602	45.034	16.304	1.066	63.694	13.283	6.888	1.316	18.991	148.88	12.555	-7.031e+09	.987	1911.608
2010	27.219	6.093	3.844	2.193	41.403	-105.814	-.76	61.028	6.285	6.936	1.455	17.585	150.298	13.72	-5.115e+09	1.312	2280.437
2011	1211.307	4.816	4.852	1.926	44.81	-2462.224	-51.406	63.24	24.343	7.023	1.324	16.02	153.863	10.84	-8.024e+09	9.89	2487.598
2012	-3.096	4.746	5.251	1.931	51.509	101.601	3.392	61.693	15.32	7.075	1.272	16.792	157.5	12.218	-5.540e+09	2.366	2723.822
2013	18.655	5.95	6.933	2.198	50.946	46.256	1.631	59.378	6.209	7.118	1.959	16.722	157.312	8.476	-4.335e+09	20.157	2961.549
2014	.106	4.357	3.747	1.794	49.096	-104.046	-1.924	61.754	4.516	7.156	1.4	16.548	158.553	8.062	-3.080e+09	16.3	3098.986
2015	160.468	1.453	-1.850	1.655	43.496	158.286	.457	64.951	5.664	7.175	1.333	16.849	192.44	9.009	-1.629e+09	18.503	2687.48
2016	9.643	-4.86	-15.737	1.929	51.364	70.468	2.19	65.08	5.578	7.21	1.325	16.868	253.492	15.675	-3.118e+09	28.584	2176.003
2017	20.056	-.08	-16.582	2.491	58.028	83.141	1.864	69.184	11.501	7.22	1.581	17.553	305.79	16.524	-2.102e+09	27.919	1968.565
2018	9.392	.892	-22.569	3.032	61.69	64.752	1.976	68.787	12.455	7.25	1.337	16.904	306.084	12.095	-2.097e+08	29.647	2027.779
2019	-.838	3.29	79.693	2.219	59.86	77.496	2.655	67.538	-.525	7.205	1.388	15.377	306.921	11.397	-2.020e+09	15.517	2229.859
2020	-2.166	-.31	-5.125	1.878	50.912	52.543	1.875	66.488	2.465	7.255	1.893	13.642	358.811	.	-2.723e+09	15.261	2097.093

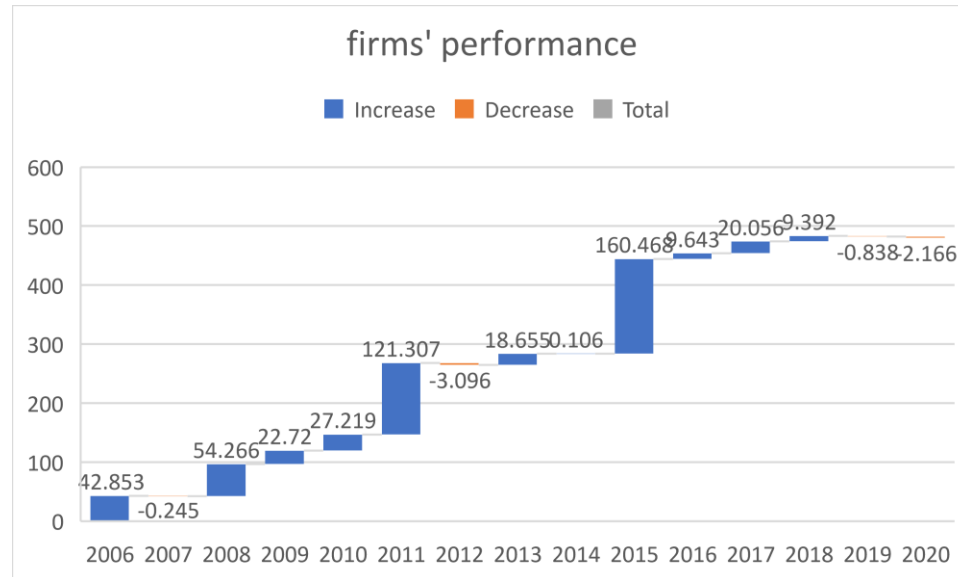
Source: Authors' Computation (2022)

The table 1 shows the average value of performance, capital structure and macroeconomics metrics used for the period under review that 2006 to 2020 in the paper. The performance metrics consists of return on equity (ROE), return on assets (ROA) return on sales (ROS) earnings per share (EPS) and return on share (RESH). While the capital structure measures are made up of long-term debt to equity (LTDE), debt to equity (DEE), debt to assets (DEASS), sales growth (SAGT), firms' size (FSIZ) and short-term liquidity (STL). And lastly, macroeconomics governances are proxy as follows: lending interest rate (%) foreign exchange rate (\$), inflation rate (%), foreign direct investment (\$) fuel import (%) and gross domestic product (\$)

## Descriptive statistics

The waterfall chart presents the composite behavior of firm's performance metrics conceptualized in the study.

Figure 1

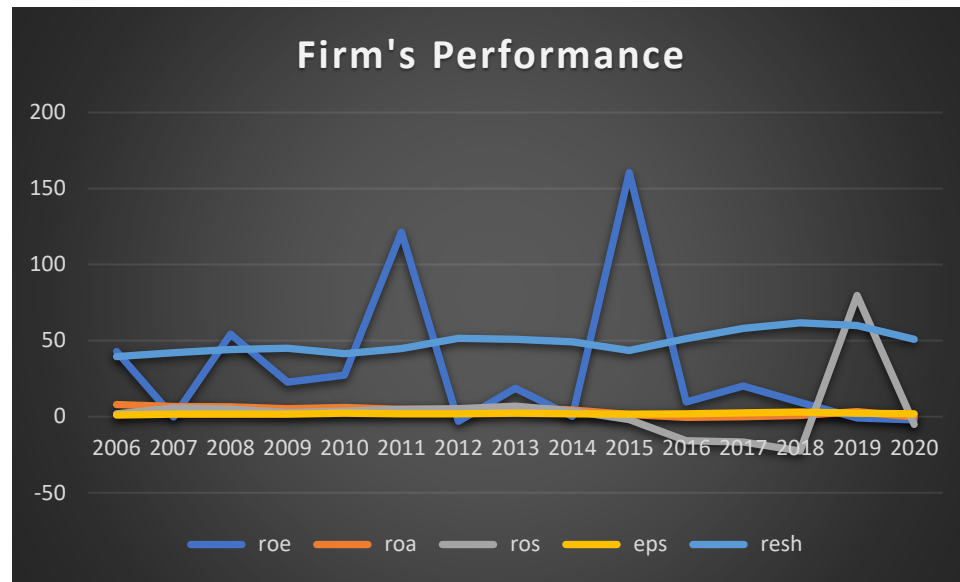


**Source: Authors Computation (2022)**

From the waterfall chart in figure 1, the firm's performance metrics experience decrement in the year 2007, which is the year of global financial crisis, also the companies under review have decrement in their profitability in the year 2012, 2019 and 2020. While in the year 2011 and 2015 the companies experience abnormal profitability. This implies that is not only global financial crisis can cause reduction in firm profitability capability, there are other unsystematic forces can impact performance adversely, which are beyond capital users' control.

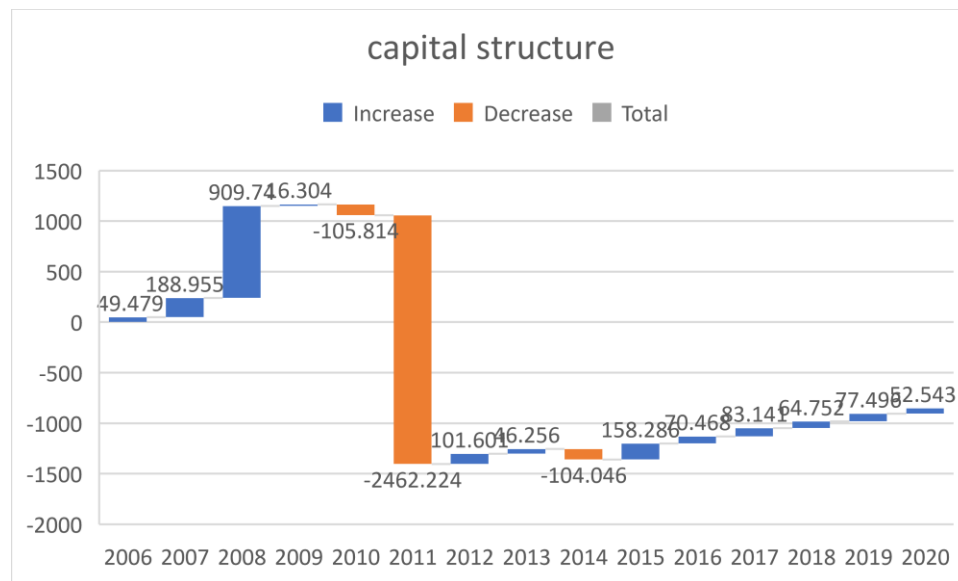
The figure 2 shows the individualistic behaviour of performance metrics. The return on equity trend shows a zig zag fluctuation starting from 2006 slump to zero during the period of global financial crisis and pick up in 2008 to 2011 slump to zero in 2012 and 2014 and pick up in 2014 and get to its peak in 2015 during the period under review. In case of return on share as a performance metric, shows a steadily trend with the value of forty percent (40 %) to sixty percent (60%). While other metrics like return on assets, return on sales and earnings per share linear behaviour during the period under purview. But, return on sales deviates from the steadily linear relation in 2014 to slump to negative in 2015 to 2018 and peak up 2018 and get to its peak in 2019 and eventually drops to zero in 2020. This suggests ROA, ROS and EPS are performance metrics that have sock absolver against eternality of negative environmental factors at realm of lower performance while ROS has steady trend with growth tendency before, during and post any crisis in economic domain where firms operate. Where return on equity is susceptible is given to changes during any negative circumstance in the economy.

Figure 2 Firm's Performance Trend



Source: Authors Computation (2022)

Figure 3 Capital Structure Chart

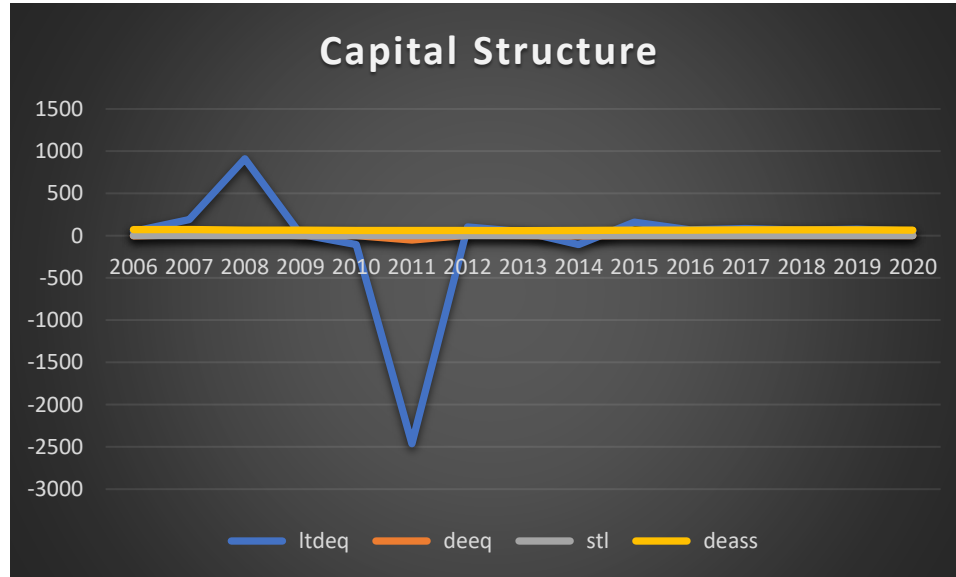


Source: Author's Computation (2022)

The figure 3 is the waterfall chart of capital structure of firms under review. The reveals that the capital structure of the firm are unaffected in the 2007 which is the GFC, the capital structure increases at increasing rate from 2007 to 2008 but increase at decreasing rate in 2009. In 2010, there is a complete departure from incremental to decremental in that year and gallop decrement positivity to negativity of the capital structure was experienced. This suggests capital structure of

the firms are not affected in 2007 GFC but the aftermath effect is evident in 2010 to 2011. The waterfall chart shows the composite behaviour of measures of capital structure. That is long term debt to equity, debts to equity, short term liability and debt to assets

Figure 4 **Capital Structure Trend**



Source: Author’s Computation (2022)

The figure 4 shows individualistic fluctuation of component of capital structure. Long term debt to equity starts its increment in the year of GFC 2007, and reaches its peak in 2008 and declines in 2009. It starts its negative moment in 2009 and reaches its highest decline peak in 2011 and returns to positive in 2012, this is a steady trend from 2012 to 2013, there is a slight decrease in 2014 and a slight increase in 2015, it is steady for the remaining period from 2016 to 2020. On the other side, other metrics of capital structure in the study have linear and steady trends in the period under review. This infers that only long-term debt to equity is prone to fluctuation during any crisis in the economy. While others are not prone to changes.

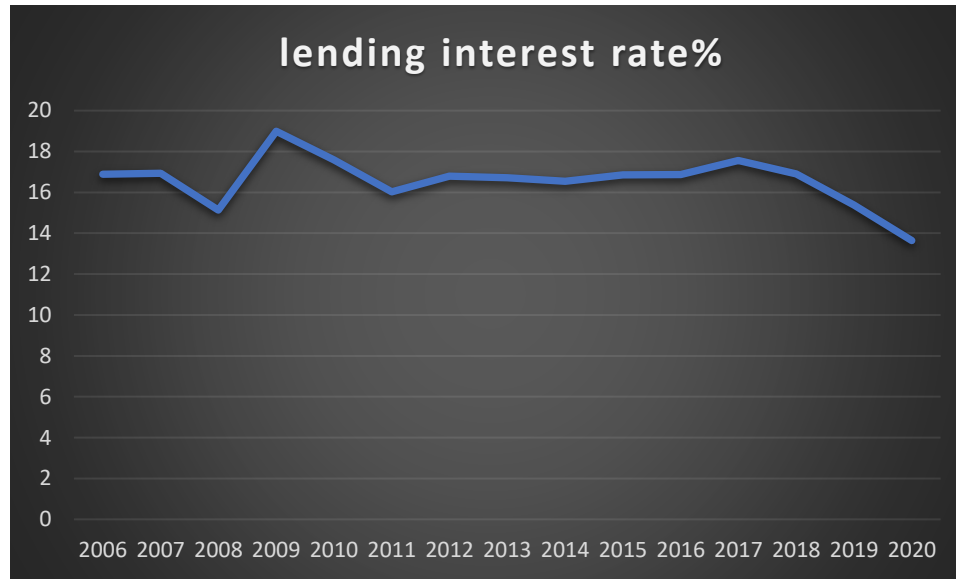
**Macroeconomics variables**

These are economic variable quantities that govern the intertwining relationship within themselves in any economy that affects the operation of corporate entities. The influence of these macroeconomic variables cannot be overemphasized. Thus, this study considers some crucial and critical factors that can be impacted much on the operation of any economy. Such as lending interest rate, foreign exchange rate, inflation rate, foreign direct investment and fuel import rate.

This figure 5 depicts the trends of lending interest rate (LIR) during the global financial crisis and the period under review. The LIR as at 2006 as the base year for the study, the average value stands at 16.89%, while in the year of GFC the mean value of LIR is a bit higher than the base year, which stands at 16.94%, then the effect of this crisis forced the LIR to decline in 2008 to the value of 15.13%. The peak average value of LIR during the period under review stands at 18.99%, which is in 2009. Then, there is a decline to 16.02% in 2011. There is a steady average interest rate between 2012 and

2017. Hence, there is a diminishing return from 2018 to this current 13.62% in 2020. This suggests that average lending rate in the economy that the corporate companies operate is high, which range between 13.62% and 18.99%, this suffices, companies employ credit facilities at high cost, this invariably will affect the capital structure and financial performance both directly and indirectly.

Figure 5 **Lending Interest Rate Trend**



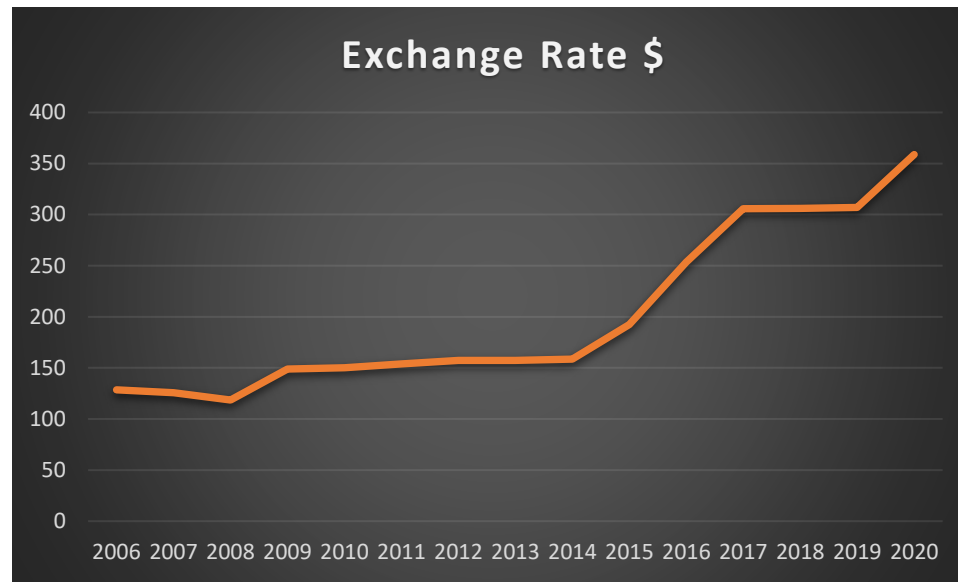
**Source: Author's Computation (2022)**

The figure 6 depicts the movement of foreign exchange rate in US Dollars. In the base year of this research, the average value of exchange rate \$ stands at \$128.652: ₦1. There is downward movement from the base value in 2006 to 2008 which have the value \$118.567. hence, from 2008 there is upward movement of foreign exchange rate, currently, average value of FER stands at \$358.88. This infers that the upward trend of FER most have impacted the economy of Nigeria negatively, reasons being Nigerian economy is imported oriented economy which wholly dependent foreign inputs for the operation of domestic companies.



Figure 6

Foreign Exchange Rate Trend

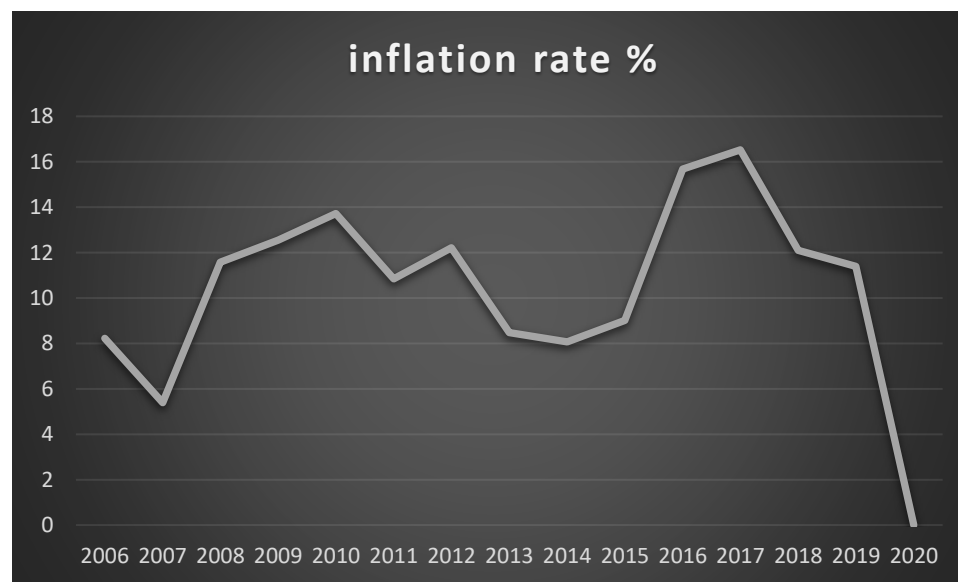


Source: Author's Computation (2022)

Figure 7 describes the fluctuation behaviour of inflation rate in Nigerian economy. The average value of inflation rate in base year stands at 8.225%. in 2007, the year of GFC has the lowest average value of inflation stands at 5.388, thereafter, there is upward movement of the value to 11.581%. where inflation rate has its average vale in 2017 with the value of 16.524. this indicates during the period under review, the purchasing power of both individuals and corporate firms is being eroded by the unstable activities of inflation within the economy.

Figure 7

Inflation Rate Trend



**Source: Author's Computation (2022)**

The figure 8 depicts the trend of foreign direct investment in Nigerian economy during the period under review. In economy of any countries, there are three types of FDI, that is, FDI inflow, FDI outflow and FDI net. The FDI dissects here in the FDI net. Hence, the trend in figure 9 shows negative net foreign direct investment. The worst net negative value is in 2011 while the highest negative value is 2018. This suggests the FDI net negative value experienced during the period affirm that no contribution to the economy is coming through FDI, rather the drain or mob the real value from the economy, because the FDI outflows overwhelm the FDI inflows. The influence of this will affect the capital structure and financial performance of corporate firms.

**Figure 8 Foreign Direct Investment Trend**

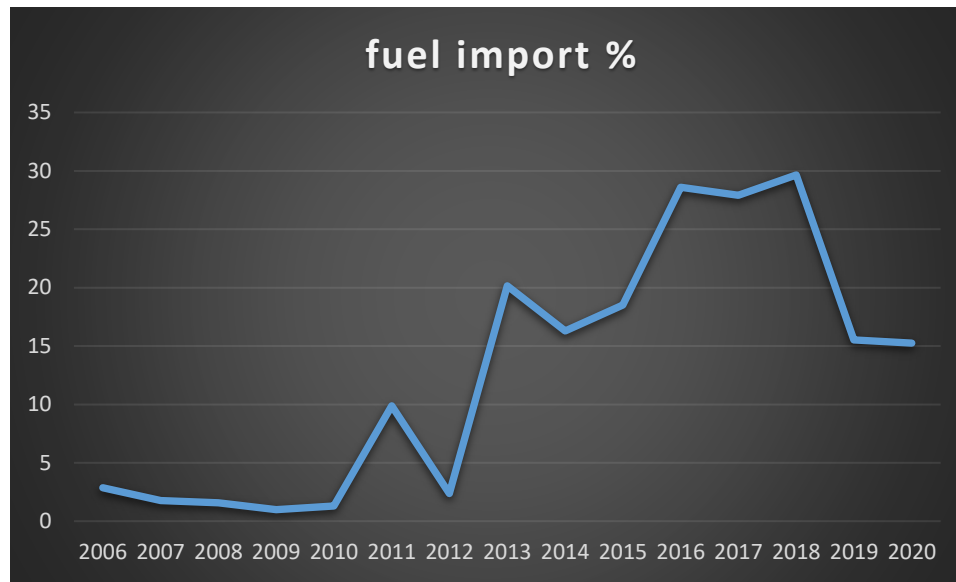


**Source: Author's Computation (2022)**

The figure 9 shows the movement of fuel importation to Nigerian economy for the period under review. Since the commencement of importation of fuel to Nigerian economy, the percentage of importation constantly on incremental progression. This implies that fuel consume by individuals and corporate firms import oriented. Between 2006 to 2010 have minimum importation percentage, while from 2011 importation constantly having incremental progression.

Figure 9

Fuel Importation Ratio Trend

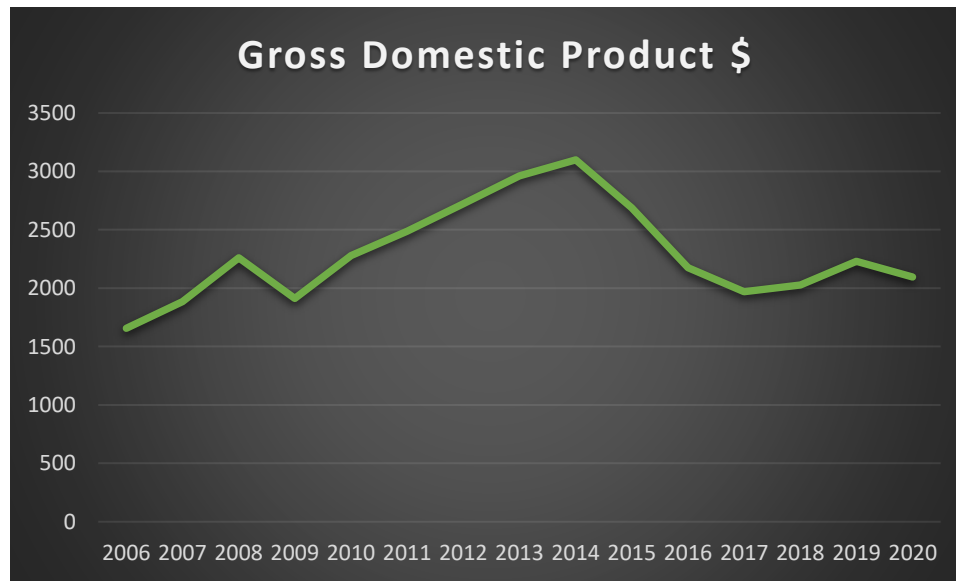


Source: Author's Computation (2022)

The figure 10 shows the trend of gross domestic product for Nigerian economy between 2006 to 2020 years. The GDP is captured in US Dollar. The value of GDP for the base year is \$1656.425, with steady increases in 2007, the year of GFC and arises to a peck 2008, hence, declines in 2009. And starts increment again in 2010 and steadily moves to highest peck in 2014 with the value of \$3098.986. from here it starts to diminishes and end up in that trend in 2020 with value of \$2097.093. this implies that Nigerian economy GDP values did not constant and steady progression

Figure 10

Gross Domestic Product Trend



Source: Author's Computation (2022)

The section two has explained the phenomenon of this study which trend of capital structure and firm performance in economic glitch of listed firms.

The table 1 shows the result of GMM estimator of this study which for the purpose predicting the phenomenon of the study.

VARIABLES	(model 1) roe	(model 2) roe	(model 3) roe	(model 4) roe	(model 5) roe
L.roe	-0.0667*** (0.0137)	-0.0674*** (0.0137)	-0.0672*** (0.0143)	-0.0673*** (0.0143)	-0.0664*** (0.0143)
ltdeq	0.171*** (0.0271)	0.173*** (0.0271)	0.169*** (0.0282)	0.169*** (0.0282)	0.176*** (0.0282)
deeq	-28.45*** (1.311)	-28.51*** (1.312)	-28.33*** (1.363)	-28.33*** (1.364)	-28.65*** (1.364)
deass	-11.60*** (2.265)	-10.90*** (2.286)	-11.71*** (2.436)	-11.69*** (2.438)	-11.92*** (2.436)
stl	-20.23 (26.60)	-20.55 (26.57)	-31.42 (33.82)	-31.55 (33.89)	-30.05 (33.80)
lir	-24.04 (29.54)	-26.44 (29.70)	-52.62 (35.23)	-51.26 (36.77)	-109.3*** (40.50)
erus		-0.890 (0.804)	-0.0359 (0.931)	-0.00307 (1.211)	-3.347** (1.651)
ir			8.140 (13.97)	7.386 (17.17)	1.354 (16.80)
fdius				-3.91e-09 (2.92e-08)	3.09e-08 (3.22e-08)
fi					1.962 (5.847)
gdpus					-0.558*** (0.1798)
fsize	-605.0*** (218.2)	-391.4 (296.9)	-529.0* (318.3)	-514.8 (326.9)	176.9 (396.1)
Constant	5,575*** (1,778)	4,243** (2,160)	5,456** (2,362)	5,318** (2,520)	3,581 (2,557)
Observations	737	737	683	683	683
Number of panel_15	58	58	58	58	58

The explained variable of the study is return on equity (roe), from the result, lagged of return on equity {L.roe -0.0633 (0.000)} is negatively related and statistically significant at 1% significance level with return on equity. This suggests that dependent variable (roe) has both short-run and long-run association with explanatory variables of this model.

Hence, the table 1 is used in achieving the stated objectives and hypotheses. The first objective captured the capital structure metrics association with the firm's performance vis-à-vis with hypotheses.

Long-term debt to equity {ltdeq 0.231 (0.000)} has positive and statistically significant at 1% level of significance (LOS) related with (roe). This implies that there is a direct nexus between long-term debt to equity and return on equity. Where long-term debt increases this will bring about also increment in the return on equity or where there is decrement in long term debt this will bring about decrement in the performance metric of firm. Hence, the alternative hypothesis is accepted

that stated that there is significant impact of capital structure metrics on the performance metrics of listed firms under view periods

Debt to equity {deeq -31.27 (0.000)} is negatively and statistically significant at 1% LOS associated with return on equity (roe). This indicates that the nexus between debt to equity is inverse. Which suggests when there is an increase in debt to equity this will bring about reduction in performance metrics of these companies and vice versa, when the debt to equity is increased the return on equity will decrease. Hence, the alignment of this result is associated with these extant literature (Abdullah, & Tursoy, 2023; Ahmad, Abdullah, & Roslan, 2012; Boshnak, 2022; Iqbal. & Islam, 2022; Nguyen & Nguyen, 2020; Nguyen et al., 2021; Rajan & Zingales, 1995 Titman & Wessels, 1988 Zeitun, & Tian, 2014). while studies that are not align with this current result include the following (Akintoye, 2008; Al-Ajmi, 2009; Detthamrong et al., 2017; Hasan, *et al.*, 2014; Iavorskyi, 2013; Javed, Younas, & Imran, 2014; Nguyen, H. T., & Nguyen, A. H. 2020). Therefore, the alternative hypothesis is accepted that stated that there is significant impact of capital structure metrics on the performance metrics of listed firms under view periods

Debt to assets {deass -10.89 (0.000)} is negatively connected and statistically significant at 1% LOS with return on equity (roe). This reveals that the nexus between the explained variable (roe) and explanatory variable (deass) is inverse. That suggests any decrement in the explained variable will result in an increment in the explanatory variable of performance metrics, the outcome is consistent with these extant literature (Ahmad, Abdullah, & Roslan, 2012; Boshnak, 2022; Iqbal. & Islam, 2022; Nguyen & Nguyen, 2020; Nguyen et al., 2021; Rajan & Zingales, 1995 Titman & Wessels, 1988 Zeitun, & Tian, 2014), In contrary to these extant literature have positive influence in the firms performance (Al-Ajmi, 2009; Dada, , & Ghazali, 2016;. Detthamrong et al., 2017; Hasan, *et al.*, 2014; Iavorskyi, 2013; Javed, Younas, & Imran, 2014; Nguyen, H. T., & Nguyen, A. H. 2020) Also, null hypothesis is rejected while alternative is opted for which stated that there is statistical and significant effect of capital structure metrics on the performance metrics of listed firms under view periods.

Lastly, short liquidity {stl -8.025(0.374)}, this shows that there exists negative and statistically insignificant association between dependent variable and independent variable of short liquidity and return on equity respectively. Which indicates indirect connection between these variables, it implies any decrement in the explained variable will result in an increment in the explanatory variable of performance metrics vice versa. The result is consistent with these literature (Ahmad, Abdullah, & Roslan, 2012; Boshnak, 2022; Iqbal. & Islam, 2022; Nguyen & Nguyen, 2020; Nguyen et al., 2021; Rajan & Zingales, 1995 Titman & Wessels, 1988 Zeitun, & Tian, 2014). (Ahmad, Abdullah, & Roslan, 2012; Boshnak, 2022; Iqbal. & Islam, 2022; Nguyen & Nguyen, 2020; Nguyen et al., 2021; Rajan & Zingales, 1995 Titman & Wessels, 1988 Zeitun, & Tian, 2014), In contrary to these extant literature have positive influence in the firms performance (Al-Ajmi, 2009; Dada, , & Ghazali, 2016;. Detthamrong et al., 2017; Hasan, *et al.*, 2014; Iavorskyi, 2013; Javed, Younas, & Imran, 2014; Nguyen, H. T., & Nguyen, A. H. 2020) But the null hypothesis is accepted, which stated there is no statistical and insignificant consequence of capital structure metrics on the performance metrics of listed firms under view periods.

Macroeconomics variables are economics governance that governed economic activities which influences cannot be overemphasized in both evolved and evolving economy. Such variables include unemployment rate lending interest rate, inflation rate, foreign exchange rate, foreign direct investment rate. The operational effect of these variables cannot be underestimated underscored to the performance of corporate entities. To this ends the study considers some of these variables influence on the performance of the firms.

Table 1 lending interest rate {lir -46.04(0.000)} is negatively and statistically significant at 1% LOS with return on equity (roe). This suffices lending interest rate is inverse related with roe. During the period under review, lending interest rate has been consistently increasing, hence, there are been a declining in the return on equity. This relationship is statistically significant because null hypothesis is rejected.

Exchange rate in dollars {erus -1.315(0.000)} has a negative and statistically significant at 1 % LOS connection with the roe. This means that the constant increase in the exchange rate in \$ brings about decrease effect on the firm financial performance during the period. The effect is statistically significant because, null hypothesis is rejected.

Inflation rate {ir 8.901(0.000)} is positively and statistically significant related with the performance metric. This implies that the constant increment in inflation rate is actually bring about increment in the financial performance of these firms. Hence, alternative hypothesis is accepted.

Foreign direct investment in dollar {fdius 3.06(0.338)} is directly and statistically insignificant connected with return on equity. This means any increase in foreign direct investment bring about increment in financial performance of the firms. But null hypothesis is accepted, that is the effect is insignificant.

Fuel importation rate {fi 1.168(0.037)} is positively and statistically significant at 10% LOS with the dependent variable. This indicates any increase in the independent variable (fuel importation), thus will also cause rise in the dependent variable (roe). Thus, the null hypothesis is not accepted.

Moreover, gross domestic products in dollar {gdp\$ -0.172(0.000)} is negatively and statistically related with firm financial performance. This indicates that adverse effect on the financial performance of firms during periods under review. The null hypothesis is rejected.

In sum, it shows that during the period under review, the macroeconomics variables that governed the economy have divergent effect and impact on the financial performance of corporate entities. From the macroeconomics variables, lending interest rate, exchange rate in dollar and gross domestic product in US dollars have impacted the economic world of the corporate companies adversely These have impacted in a declined manner of their financial performance. While inflation rate, foreign direct investment in US dollars and fuel importation have affected the capital structure and firms' performance in an enhancement manner

## **5.0 Conclusion and recommendations**

The study sets out to find out the behaviour of capital structure and firm performance in the domain and dynamics of macro and micro environmental contingencies oscillation. The controllability of capital managers is a function of which environment they operate. There are three environmental forces within which business entities oscillating, micro environmental forces are contingencies which users of capital can exercise control over at advantage of capital owners, this called controllable forces such as capital structure, whereas task and macro environmental forces are uncontrollable by managers rather they maneuver, in order to be able enhance the profitability and wealth maximization of capital owners, such task and macro environmental factors include leading interest rate, inflation rate, foreign exchange rate and so on. Hence, the study findings show that capital managers were only able to exercise control on long-term debt to equity which able to impacted positively to the profitability and wealth maximization of capital owners or enhances capital structure, whereas debt to equity, debt to assets and short-term liability have impoverish the profitability and wealth maximization of capital owners. These are micro environmental contingencies are within the capability of capital managers. But due to uncertainties behaviour of macro contingencies, these have impacted negatively on the micro contingencies. While the result of findings of macro contingency behaviour on the profitability and wealth maximization of capital owners, it shown that lending interest rate foreign exchange rate and gross domestic products have impoverish the profitability and wealth maximization of capital owners. Whereas inflation rate, foreign direct investment and fuel importation brought enhancement to the profitability and wealth maximization of capital owners. Therefore, the study concludes due to mutuality or interdependency of both micro and macro environmental contingencies, they have impacted on the capital structure and performance of listed companies under purview of this study. This shows that capital managers are not insusceptible by their controllability and capability of micro contingencies (capital structure/ internal forces) but, rather the macro/external contingencies have inroad to impacted the micro /internal forces directly or indirectly.

**Recommendations.** This study result advises that as debt financing can have a significant contrary effect on firm performance, capital users should modestly in engaging leverage in order to maximize capital owners' wealth. Capital users should keep debt finance at barest minimum level and instead focus financing at the margin on internal sources like retained earnings and new equity, using debt finances only as a ways and means.

**Policy implication.** The findings have practical implications for firm capital users, that help professional managers to identify some macroeconomics variables that can affect their decision on the capital structure mixture and performance and choose the values that enhance optimal capital structure and firm performance.

The study results also provide policymakers with better understanding of the relationship between capital structures and firms' performance and environmental contingencies thereby underpinning future policy formulation.

**Future research** may be extended to examine the influence of capital structure on corporate performance and moderating effect of macro economics variables on their relationship.