

Corporate Governance Structure and Free Cashflow of Non-Financial Firms in Nigeria

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Abstract

This study investigates if there is any relationship between certain corporate board characteristics and financial performance of non-financial listed firms in Nigeria. It uses secondarily sourced panel data over the period from 2007 to 2022 of 75 such firms listed on the floor of the Nigerian Exchange Group (NXG). The generalized method of moments (GMM) results reveal that board independence, board gender diversity, board meetings, board financial expertise, institutional ownership, board busyness, audit committee financial expertise and audit committee gender diversity are positively significant with free cash flow; board size, foreign ownership, chief executive officer (CEO) with financial expertise and number of foreign directors are negatively significant while managerial ownership, top5 ownership or ownership concentration and chief executive officer (CEO) with military experience are not significant. The study concludes with some recommendations.

Keywords: Corporate Governance, Performance, Quoted Non-Financial Firms, Endogeneity, GMM.

1.0 Introduction

Finance is considered the lifeblood or life wire of any economic unit, with cash being the most important type. In order to maintain effective cash level, businesses must identify a turning or tipping point. While having too little cash can also be harmful, having too much cash can lead to illiquidity and financial difficulty. Business executives should ensure that a balance between liquidity and profitability is maintained during daily operations, as cash management has an impact on both. The ability of a firm to control its cash flow guarantees its survival and draws in new investors, who assess companies mostly based on their profitability and liquidity measures (Egbadju, 2023). Dibia (2022) asserts that as cash is a firm's lifeblood, improper management of it can have a detrimental impact on how the business operates. Harvest and Sophia (2022) claim that because there isn't enough cash to cover all of their responsibilities, businesses struggle to operate profitably all over the world.

Free cash flow (FCF), sometimes known as "cash is king," is the amount of cash a firm has left over after subtracting the expenses related to preserving or expanding its asset base (Suffian et al.,

2020). It is the extra cash flow above the amount needed to maintain assets and finance newly incoming investments. To put it another way, free cash flow (FCF) is the amount of cash that can be distributed to holders of debt, equity, preferred, and convertible securities (Suffian et al., 2020). According to Santoso (2023), free cash flow (FCF) is the amount of cash accessible to investors after all investments in fixed assets, new products, and working capital that are needed to sustain continuous business operations have been made. He continued by saying that a company with more free cash flow is stronger because it can expand, pay off debt, and pay dividends. This comment makes it abundantly evident that there is a health issue. A firm is deemed healthy when it has a lot of cash on hand; when it doesn't have enough cash on hand, it is deemed sick since it finds it difficult to pay dividends and debt. Free cash flows are essential because they enable managers to seek opportunities to increase the value of the firm's stock. Without access to cash funds, it is difficult to develop new goods, buy firms, pay cash dividends to shareholders, cut obligations, or generate new items. Nonetheless, cash amounts must to be kept at levels that strike a balance between the expenses associated with keeping cash amounts and the drawbacks of having insufficient cash amounts.

However, FCF is the primary cause of agency problems, which arise when management and ownership are divided and managers/agents neglect to act in the best interests of the principals/shareholders (Jensen & Meckling, 1976). Jensen's (1986) free cash flow hypothesis states that managers who have more capital than what is needed to fund all profitable projects are likely to waste it on low-value investments. Higher levels of free cash flow may result in a drop in the firm's value and a rise in agency costs for shareholders (Lin & Lin, 2016). One key component of reducing agency issues and defending shareholder interests is through corporate governance (CG). CG is a set of broad-based rules and principles that govern the behavior of managers and other stakeholders in order to ensure that the rights of all stakeholders are protected, transparency and accountability are upheld, and the dos and don'ts are clearly defined in order to accomplish the goals of the company (Egbadju, 2022). CG describes the relationship between a firm's stakeholders and the laws and regulations that govern it. It does this by ensuring that the directors act in the best interests of the company and that they are held accountable to capital providers for the use of assets in order to achieve the firm's goals (Okoye & Ofoegbu, 2006).

Many previous studies on how corporate governance impacts free cash flow has attracted researchers' attention leading to a range of study designs and findings which found strong relationship between them, both in developed-Lin and Lin (2016)- and developing economies-Nuriyanti and Trisnawati (2023)-with mixed outcomes. This study differs from others in that it uses many more variables that others researchers reviewed never used such as: board size, board gender diversity, board meetings, board financial expertise, chief executive officer (CEO) with military experience, chief executive officer (CEO) with financial expertise, number of foreign directors, board busyness, audit committee financial expertise and audit committee gender diversity. This study also uses a longer time span of 16 years from 2007 to 2022 which to the best of my knowledge none in the previous studies reviewed used. We, therefore, hypothesized that corporate governance structures have no significant effect on free cash flow of quoted non-financial firms in Nigeria. Following this introduction, the rest of the paper is divided into five

sections with the literature review in section two, methodology in section three, discuss of results and various pre and post tests in section four and the fifth section concludes this paper.

2.0 Review of Related Literature.

2.1 Theoretical Underpinning.

2.1.1 Agency Costs of Free Cash Flow.

The relationship between management and stockholders is governed by a contract between agents and principals, according to agency theory. The contract's explicit and implicit incentive structures have an impact on the agent's behavior. An agency problem occurs when managers or agents behave in their own best interests without considering the interests of shareholders. According to Jensen (1986), agency issues with equity stem from the occurrence of excessive free cash flows at the manager's (agent's) discretion. Free cash flow is defined by Jensen (1986) as "the extra cash or in excess of that needed to fund all projects that have positive net present values when discounted at the appropriate cost of capital." Managers (agents) can invest free cash profitably or spend it on plans to expand the company's size and undergo restructuring in order to increase their compensation (Adinehzadeh & Jaffar, 2013). On the other hand, the manager may choose to distribute a dividend to shareholders using the free cash flow. Therefore, depending on management choices regarding the distribution of free capital, a firm's agency problem may worsen or improve.

2.2 Empirical Literature

Santoso (2023) empirically tested the impact which free cash flow and leverage have had on earnings management with good corporate governance as a moderating variable. The study made use of sampled 200 listed consumers' goods non-financial firms for 10 years starting from 2011 to 2020. The results of the Moderate Regression Analysis (MRA) showed that free cash flow and good corporate governance negatively and significantly impacted earnings management while good corporate governance can mitigate free cash flow.

Nuriyanti and Trisnawati(2023) attempted an empirical study of how corporate governance, free cash flow as well as leverage enhanced earnings management enhanced in Indonesia. The study used secondary panel data over the period from 2018 to 2021 obtained from 180 quoted manufacturing firms on the floor of the Indonesian Stock Exchange (IDX). The OLS regression results indicated that independent board of commissioners positively and significantly impacted earnings management while free cash flow and leverage negatively and significantly impacted it.

Suffian et al.(2020) empirically tested whether free cash flow and earnings management has affected market performance of firms in Malaysia. The study used secondary panel data over the period from 2009 to 2011 obtained on Shariah-compliant firms. The OLS regression results indicated that free cash flow and earnings management positively and significantly influenced Tobin's Q.

Naserpoor et al. (2017) researched on ascertain the extent to which corporate governance have affected the level of free cash flows in Iran. Secondary data collected from annual reports of 72

companies out of a population of 496 listed on the Tehran stock Exchange. The OLS regression results showed that ownership concentration, collaborative ownership, directors' independence, managerial ownership and institutional ownership positively and significantly influenced FCF.

Ukhriyawati et al. (2017) undertook a research to determine if there is any relationship between certain factors and free cash flow in Indonesia. The study used secondary panel data over the period from 2012 to 2015 for financial firms listed in Indonesia Stock Exchange. The Partial Least Square (PLS) results revealed that good corporate governance influence positive and no significantly to free cash flow.

Lin and Lin (2016) studied whether there is any relationship between corporate governance and free cash flow in Canada. The researchers used annually sourced panel data collected over the period from 2009 to 2012 on 113 firms listed on the S&P/TSX Composite Index . The OLS regression results showed that CGI, TOBIN'SQ and RETAIN were positively significant with FCF while FSIZE and CAPEXP were negatively significant with it.

Adinehzadeh and Jaffar (2013) carried out a research on the extent to which corporate governance impacted firms' free cash flows in Malaysia. Annual secondary panel data which covered the period 2004 to 2008 collected from the financial reports of 200 firm observations in Bursa Malaysia. The regression results of the OLS indicated that audit committee size, audit committee meeting, independent audit committee members are positively and statistically significant with FCF.

3.0 Methodology

3.1 Research Design

The study uses the ex-post facto research design, otherwise called the descriptive or correlational research design, to investigate the relationship, if any, between the corporate governance mechanisms and performance of 75 non-financial firms quoted on the floor of the Nigerian Exchange Group (NXG). This study uses secondarily sourced data obtained from their annual reports over the period 2007 to 2022, making a total number of 1,200 firm-year observations.

3.2 Measurement and Definitions of Variables.

Table 1

S/N	Variables Names	Definitions	Variable Types	Measurements	Authorities
1	FCF1	Free Cash Flow1	Dependent	Operating Flow(OCF) less Capital	Santoso (2023)

				Expenditures(Capex) / Total Debts	
2	FCF(-1)	One year lag of Free Cash Flow	Instrumental	Preceding or Last year FCF or FCF_{t-1}	-
3	FCF2	Free Cash Flow2	Dependent	$FCF2(OCF-Capex)/Tdebt$	None used it
4	FCF3	Free Cash Flow3	Dependent	$FCF3(OCF-Capex)$	None used it
5	FCF4	Free Cash Flow4	Dependent	$FCF4(OCF-Capex)/Total Assets$	None used it
6	FCF5	Free Cash Flow5	Dependent	$FCF5(PAT-\Delta Capex-\Delta WC+Dep)=$ Profit after tax –change in capex-change in working capital + depreciation	None used it
7	FCF6	Free Cash Flow6	Dependent	$FCF6(PBT + Interest Expense + Dep - \Delta WC-Capex)$	None used it
8	BODS	Board size	Independent	Total number of directors on the board	None of the papers reviewed used it
9	BODI	Board independence	Independent	Percentage (%) of independent or non-executive directors on the board	Naserpoor et al. (2017)
10	BODIV	Board gender diversity	Independent	Proportion (%) of board members that are female.	None of the papers reviewed used it
11	BMET	Board meetings	Independent	Number of times the board meets in a year	None of the papers reviewed used it
12	BFE	Board financial expertise.	Independent	Number of board members with degrees/professional qualifications in accounting and finance	None of the papers reviewed used it

13	MOWN	Managerial ownership	Independent	Proportion (%) of shares own by managers	Naserpoor et al. (2017)
14	FOWN	Foreign ownership	Independent	Proportion (%) of shares own by foreigners	Naserpoor et al. (2017)
15	IOWN	Institutional ownership	Independent	Proportion (%) of shares own by institutions	Naserpoor et al. (2017)
16	CEOME	Chief Executive Officer (CEO) with military experience	Independent	A dummy variable which takes the value '1' if CEO was an officer in the Army, Navy or Airforce, otherwise '0'	None of the papers reviewed used it
17	CEOFE	Chief Executive Officer (CEO) with Financial Expertise	Independent	A dummy variable which takes the value '1' if CEO has professional qualification in accounting and finance, otherwise '0'	None of the papers reviewed used it
18	T5	Top5 Ownership or Ownership concentration	Independent	Proportion (%) of shares controlled by shareholders having 5% or more	Naserpoor et al. (2017)
19	NFDIR	Number of foreign directors	Independent	Total number of directors on the board that are non-Nigerian	None of the papers reviewed used it
20	BB	Board busyness	Independent	Directors in two or more firms at the same time	None of the papers reviewed used it
21	ACFE	Audit committee financial expertise	Independent	Proportion (%) of audit committee members WITH financial expertise	None of the papers reviewed used it
22	ACGD	Audit committee gender diversity.	Independent	Proportion (%) of audit committee	None of the papers

				members that are female.	reviewed used it
23	FAGE	Firm age	Control	Number of years since incorporated	-
24	FSIZE	Firm size	Control	Log of total assets	-
25	LEV	Leverage	Control	Total liabilities/Total Assets	-
26	LOSS	Net loss reported each year	Control	Dummy variable which equals “1” in year a firm makes a net loss, “0” otherwise	-
27	BIG4	Deloitte & Touche; Ernst & Young; PriceWater Cooper and KPMG	Control	Dummy variable which equals “1” in year a firm is audited by one of the four biggest audit firms; “0” otherwise.	-
28	YDUM	Year Fixed Effect Dummy	Control	A dummy variable which takes the value ‘1’ for each year	-
29	IDUM	Industry Sector Fixed Effect Dummy	Control	A dummy variable which takes the value ‘1’ for each industry	-

Source: Author’s Compilation from the Reviewed Literatures.

3.3 Model Specification

The functional equation of free cash flow to test the fifteen (15) hypotheses specified is stated as:
 $FCF_1 = f(\text{BODS, BODI, BODIV, BMET, BFE, MOWN, FOWN, IOWN, CEOME, CEOFE, T5, NFDIR, BB, ACFE, ACGD})$ (1)

The functional testable model will be derived as:

$$FCF = \beta_0 + \beta_1\text{BODS} + \beta_2\text{BODI} + \beta_3\text{BODIV} + \beta_4\text{BMET} + \beta_5\text{FE} + \beta_6\text{MOWN} + \beta_7\text{FOWN} + \beta_8\text{IOWN} + \beta_9\text{CEOME} + \beta_{10}\text{CEOFE} + \beta_{11}\text{T5} + \beta_{12}\text{NFDIR} + \beta_{13}\text{BB} + \beta_{14}\text{BB} + \beta_{15}\text{ACGD} + \varepsilon$$
 (2).

Since we are using panel data, the model will be specified in the appropriate form as:

$$FCF_{it} = \beta_0 + \beta_1\text{BODS}_{it} + \beta_2\text{BODI}_{it} + \beta_3\text{BODIV}_{it} + \beta_4\text{BMET}_{it} + \beta_5\text{FE}_{it} + \beta_6\text{MOWN}_{it} + \beta_7\text{FOWN}_{it} + \beta_8\text{IOWN}_{it} + \beta_9\text{CEOME}_{it} + \beta_{10}\text{CEOFE}_{it} + \beta_{11}\text{T5}_{it} + \beta_{12}\text{NFDIR}_{it} + \beta_{13}\text{BB}_{it} + \beta_{14}\text{ACFE}_{it} + \beta_{15}\text{ACGD}_{it} + \varepsilon_{it}$$
 (3).

3.4 Universal Usage of Control Variables in Published Scholarly Articles From High Quality Journals.

Traditionally, control variables (CVs) are used in research models that have causal relationship. The two main ways of controlling for variables are by experimental design (before gathering the data) where the samples are manipulated or by statistical control (after gathering the data) where the researcher just includes relevant variables in the model. Some of the reasons for controlling are to eliminate omitted variables biases thereby reducing the error term which in turn increase statistical power by improving the estimated coefficients precision (De Battisti & Siletti, 2018). Cinelli et al. (2022) was of the opinion that while some data analysts, students as well as empirical social scientists have discussed the problem of omitting certain relevant variables, they have not provided a means of deciding which variables could improve or worsen existing biases in a regression model. According to Becker (2005), CVs are just as important as the predictors (independent) variable and the criterion (dependent) variable because one author's CV could be another author's predictor's or criterion variable such that including improperly any CV can produce misleading results. Hunermund and Louw (2020) noted that over 47 percent of scholarly papers published the previous five years in top management journals made use of CVs. They pointed out that they were specifically as authors asked to hypothesized and interpret CV coefficients as though these CVs were focal main variables for as much as the CVs could give valuable information to other researchers. Again, Nielsen and Raswant (2018) opined that if there is no adequate attention given to CVs, there will be a serious threat to cause and effect inferences validation and so statistical controls can be made to determine relationship between the other variables and this helps to reduce the risk of committing Type II errors. Becker (2005) as well as Becker et al (2016) gave ten points recommendations which both authors and reviewers must imbibed as guides for the inclusion of control variables in regression models. Thus, De Battisti and Siletti (2018) advised that researchers should run the regression with the CVs and without the CVs and observe the pattern of the results to know which of the models to report. Non-inclusion of these variables may lead to omitted variables biasness in our estimation results and thereby draw erroneous conclusions on which managerial and policy decisions are based (Hunermund & Louw, 2020).

Thereafter, we included some firm-specific as well as year dummy and industry sector dummy variables to control for specific fixed effect to arrive in equation 5 below.

$$FCF_{it} = \beta_0 + \beta_1 BODS_{it} + \beta_2 BODI_{it} + \beta_3 BODIV_{it} + \beta_4 BMET_{it} + \beta_5 FE_{it} + \beta_6 MOWN_{it} + \beta_7 FOWN_{it} + \beta_8 IOWN_{it} + \beta_9 CEOME_{it} + \beta_{10} CEOFE_{it} + \beta_{11} T5_{it} + \beta_{12} NFDIR_{it} + \beta_{13} BB_{it} + \beta_{14} ACFE_{it} + \beta_{15} ACGD_{it} + \beta_{16} FAGE_{it} + \beta_{17} T5_{it} + \beta_{18} NFDIR_{it} + \beta_{19} BB_{it} + \beta_{20} ACFE_{it} + \beta_{21} ACGD_{it} + \beta_{22} YDUM_{it} + \beta_{23} IDUM_{it} + \varepsilon_{it} \quad (5).$$

3.5 Description of the Estimation Technique Used.

3.5.1 Dynamic Data Analysis using Generalized Method of Moments (GMM):

Generalized Method of Moments (GMM) regression estimation technique is a generic method for the estimation of statistical model parameters. The essence of using GMM for a dynamic panel data is to practically solve the problem of endogeneity bias which simultaneously tackles unobserved heterogeneity (Chung et al., 2018). GMM is designed to handle the problems of

multicollinearity, heteroscedasticity and autocorrelation but especially second order correlation. Many studies in corporate finance which tries to explain causal-effect relationships often encounter difficulties in dealing with endogeneity and this can lead to inconsistent and biased parameter estimates (Wintoki et al., 2012) or we may not even get the right coefficient sign-positive or negative (Ketokivi & McIntosh, 2017), thereby resulting in misleading inferences, conclusions and interpretations (Li et al., 2021). Li et al. (2021) observed that out of about twelve (12) papers where endogeneity bias were ever mentioned, only three of them used the dynamic model approach while only one applied the rigorous way by reporting the results of the test. To identify endogeneity in our model, we run a fixed effect regression model for only the independent variables with each independent variable being a dependent variable in turn and then extract its residual. This residual variable is used to replace the main dependent variable in the original regression equation and then, rerun and observe the p-value. If the p-value of the residual variable is less than or equal to 5%, then there is an endogeneity in our model. The endogeneity test results in Table.2 below showed that of the twenty-two(22) variables used in this study, eleven (11), i. e. RES_BODS, RES_BODIV, RES_MOWN, RES_NFODIR, RES_CEORE, RES_ACGD, RES_FAGE, RES_LEV, RES_LOSS, RES_BIG4 and RES_YDUM- have endogeneity problem since their P-values are less than 5%.

Table 2 **Endogeneity Test Results**

S/N	Estimated Residuals of Variables	P-Values	S/N	Estimated Residuals of Variables	P-Values
1	RES_BODS	0.1138	12	RES_CEORE	0.3843
2	RES_BODI	0.8606	13	RES_CEORE	0.4882
3	RES_BODIV	0.4687	14	RES_ACFE	0.0754
4	RES_BMET	0.0289	15	RES_ACGD	0.8121
5	RES_BFE	0.7986	16	RES_FAGE	0.0091
6	RES_MOWN	0.9448	17	RES_FSIZE	0.0000
7	RES_IOWN	0.9963	18	RES_LEV	0.0002
8	RES_FOWN	0.0000	19	RES_LOSS	0.0240
9	RES_T5	0.6781	20	RES_BIG4	0.7954
10	RES_BB	0.6332	21	RES_IDUM	0.9700

11	RES_NFODIR	0.0929	22	RES_YDUM	0.0099
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Source: Researcher's Computations (2024) Using EViews13 Software.

If a regression estimator can still be reliable in the presence of outliers and its standard error consistent when the regression errors have outliers, autocorrelation and heteroskedasticity, then it is adjudged to be robust (Ismail et al., 2021). GMM is one of the dynamically robust estimation techniques which make use of the lagged dependent variable as one of its instrument to control for endogeneity problems. The use of lagged dependent variable is, first, to eliminate autocorrelation in the residuals and, secondly, to capture the dynamism in panel data by controlling for endogeneity bias. By including the lagged value of the dependent variable, that is, FCF_{it-1} , due to unobserved heterogeneity transforms the static model to a dynamic one.

Thus, including the lagged dependent variable to equation 5, we have equation 6

$$FCF_{it} = \beta_0 + \beta_1 FCF_{it-1} + \beta_2 BODS_{it} + \beta_3 BODI_{it} + \beta_4 BODIV_{it} + \beta_5 BMET_{it} + \beta_6 FE_{it} + \beta_7 MOWN_{it} + \beta_8 FOWN_{it} + \beta_9 IOWN_{it} + \beta_{10} CEOME_{it} + \beta_{11} CEOFE_{it} + \beta_{12} T5_{it} + \beta_{13} NFDIR_{it} + \beta_{14} BB_{it} + \beta_{15} ACFE_{it} + \beta_{16} ACGD_{it} + \beta_{17} FAGE_{it} + \beta_{18} T5_{it} + \beta_{19} NFDIR_{it} + \beta_{20} BB_{it} + \beta_{21} ACFE_{it} + \beta_{22} ACGD_{it} + \beta_{23} YDUM_{it} + \beta_{24} IDUM_{it} + \varepsilon_{it} \quad (5).$$

4.0. Method of Data Analysis

4.2 Bivariate Data Analysis (Correlation Analysis)

The correlation analyses among the variables are meant to first determine the association between each pair of the dependent and independent variables as well as among the explanatory variables. The degree of association may be weak (0.00 to 0.5), moderate (0.51 to 0.8) or high (0.81 and above). A very high association among the regressors poses a problem of multi-collinearity (Gujarati, 2003). Hence, Table 4a below is meant to check whether the problem of multicollinearity is embedded in the variables correlation coefficient in the model. The results show that all the variables have weak associations and this attest to the fact that there is no problem of multicollinearity among the variables.

Table 4a.
 Covariance
 Analysis:
 Ordinary
 Date:
 03/02/24
 Time: 09:54
 Sample:
 2007
 2022
 Included

observations
 : 1200
 Balanced sample
 (listwise missing
 value deletion)

Covariance

Correlation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1)FC																								
F6	2.6																							
	1.0																							
2)B	-																							
ODS	10	6.0																						
	6	0																						
	-	1.0																						
	0.00																							
3)B	62	0.0	0.0																					
ODI	5	0	2																					
		0.0	1.0																					
	0.01	0																						
4)B			-																					
ODI	23	0.0	0.0	0.0																				
V	52.359	0.26	1.26																					
			-																					
	0.00	0.1	0.1	1.0																				
	1	3	6	0																				
5)B				-																				
MET		0.5	0.0	0.0	1.4																			
	75.9	1	4	3																				
				-																				
		0.2	0.1	0.3	1.0																			
	0.00	0	2	0																				
	24	-	-	-	-	0.1																		
6)BF	56	0.0	0.0	0.0	0.0	768																		
E	9.	756	049	039	121	1																		

	5	1	8	7					
	-	-	-	-					
	0.00.0	0.0	0.0	0.0	1.0				
	35	733798844	241	000					
	0	9	8	3	62	00			
	96	-							
7)M	08	1.3	0.0	0.0	0.3	0.2	272		
OW	64	686196382728	087.86						
N	2.	33	12	44	04	35	79		
	0.0-								
	03	0.0	0.0	0.0	0.0	0.0	1.0		
	55	337081206188	300	000					
	2	99	09	24	33	51	00		
	-								
	46	-							
	62	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
8)FO	07	499068012267	063422	066					
WN	5.	48	20	40	60	91	74	36	
	-								
	0.0	-							
	87	0.0	0.1	0.0	0.0	0.0	0.0	1.0	
	18	623426338683	465263	000					
	4	95	39	15	83	42	75	00	
	42	-							
	26	2.8	0.4	0.2	2.6	0.8	308	0.4	205
9)IO	38	178923231765	314.15	9568.4					
WN	74	76	24	41	83	23	70	40	59
	0.0	-							
	05	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.0
	68	253741438492	435111	334	000				
	9	36	13	11	30	81	73	54	00
	3.8-								
	3E	42.	1.5	2.5	5.1	1.2	825	1.7	948489
10)T	+0	530307679677	211.85	707.73	21.				
5	8	52	98	51	19	53	92	44	45
	0.0-								
	10	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
	57	784472034194	131260	245945	000				
	7	40	70	22	97	30	37	16	42
	00								

	72	72	46372	83	19487	83	63979	96	96	00345	00								
	9		16		72		57			35									
	-																		
	56		-		-		-			-									
16)A	57	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CGD	13.433007047123023556015847051015131006012093074																		
	1	81	33	18	58	72	67	05	60	02	80	70	19	22	87	41			
	-																		
	0.0		-		-		-			-									
	40	0.2	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	1.0			
	04	051580872195653390534472260881883122317188000																	
	9	50	35	05	55	88	67	31	09	58	78	13	37	10	60	00			
	2.1		-		-		-			-									
17)F	7E	0.9	0.3	0.2	3.6	0.3	7.7	1.4	17.	151	1.1	4.9	0.4	0.4	3.9	0.2	340		
AGE	+0	525827371926355178688683.10								686500466814655735.38									
	8	22	55	18	40	82	40	05	15	64	10	80	84	84	63	23	71		
	0.0		-		-		-			-									
	71	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.0	0.3	0.3	0.0	0.0	0.2	0.1	1.0		
	69	210416144670432253437211370049309413584347718000																	
	9	61	93	87	21	57	24	96	25	29	90	31	17	26	75	68	00		
	-																		
	29		-		-		-		-		-								
18)F	12	0.8	0.0	0.0	0.1	0.0	0.2	0.0	1.1	5.3	0.0	0.1	0.1	0.0	0.0	0.0	2.2	1.0	
SIZE	62	658238200293432125390111922304147076195946179347471																	
	84	36	96	42	62	07	98	87	29	23	69	90	96	18	02	43	27	10	
	-																		
	0.1		-		-		-		-		-								
	73	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.1	1.0	
	82	451594744054004125169239238433383796427009032183000																	
	0	65	95	70	95	16	77	73	33	24	70	63	08	03	81	80	70	00	
	-																		
	1.0-		-		-		-		-		-		-		-				
19)L	1E	12.	0.3	0.2	13.	1.6	9.7	1.2	36.	250	1.1	5.5	2.2	2.5	8.5	0.3	157	16.	102
EV	+0	108040487039553117757980.78								131341701085305956.34					61023.				
	8	04	41	87	39	72	61	13	58	87	11	11	28	52	39	78	02	03	73
	-		-		-		-		-		-		-		-		-		-
	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
	06	488205219076389058386080112530675383555921453843605000																	
	11	49	37	18	15	35	15	36	61	14	07	08	15	43	52	65	43	35	00

4.2b Bivariate Data Analysis (Variance Inflation Factor)

Table 4b shows the results of the variance inflation factor (VIF) and the corresponding tolerance column. A VIF of any variable less than 10 with its tolerance level greater than 0.2 is free of multicollinearity for VIF that ranges between 5 to 10 is adjudged to have highly correlated variables (Shrestha, 2020). Since all our variables has a VIF less than 10 and a tolerance more than 0.2, our variables do not exhibit multicollinearity.

Table 4b

S/N	Variables	Variance Inflation Factor (VIF)	Tolerance
1	BODS	1.301135	0.76856
2	BODI	1.093013	0.914902
3	BODIV	1.41788	0.705278
4	BMET	1.252895	0.798151
5	BFE	1.0711	0.93362
6	MOWN	2.243506	0.445731
7	FOWN	1.167729	0.856363
8	IOWN	2.226673	0.449101
9	T5	1.036472	0.964811
10	NFODIR	1.206429	0.828893
11	BB	1.316672	0.759491
12	CEOME	1.106332	0.903888
13	CEORE	1.151356	0.868541
14	ACFE	1.223221	0.817514
15	ACGD	1.356447	0.73722
16	FAGE	1.561725	0.640318
17	FSIZE	1.363837	0.733225
18	LEV	1.170045	0.854668
19	LOSS	1.094322	0.913808
20	BIG4	1.12131	0.891814
21	IDUM	1.183542	0.844921
22	YDUM	1.551215	0.644656

Source: Researcher's Computations (2024) Using EViews13 Software.

4.3 Regression Models Estimation Results and Hypotheses Testing.

Table 5. Dependent Variable: FCF1
 Method: Panel Generalized Method of Moments
 Transformation: Orthogonal Deviations
 Date: 03/01/24 Time: 22:21
 Sample (adjusted): 2007 2022
 Periods included: 16

Cross-sections included: 75

Total panel (unbalanced) observations: 1,200

White period (period correlation) instrument weighting matrix

White period (cross-section cluster) standard errors & covariance (d.f. corrected)

Standard error and t-statistic probabilities adjusted for clustering

Instrument specification: @DYN(FCF1_OCF_CAPEX_INV_DIV_,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCF1(-1)	0.008605	0.001286	6.692316	0.0000
BODS	-21091195	355186.9	-59.38055	0.0000
BODI	3.69E+08	11291288	32.70031	0.0000
BODIV	5.69E+08	27519031	20.66090	0.0000
BMET	40598087	277316.7	146.3961	0.0000
BFE	3.00E+08	2104369.	142.4451	0.0000
MOWN	-2254634.	4202294.	-0.536525	0.5932
FOWN	-50346581	18195303	-2.767010	0.0071
IOWN	10169830	4249720.	2.393059	0.0192
T5	14526.75	17192.06	0.844968	0.4009
NFODIR	-1.50E+09	9235899.	-162.2109	0.0000
BB	2.73E+08	24446634	11.15104	0.0000
CEOME	83217537	78754117	1.056675	0.2941
CEORE	-8507807.	1146058.	-7.423540	0.0000
ACFE	74512955	6623990.	11.24895	0.0000
ACGD	3.09E+08	13037455	23.71547	0.0000
FAGE	-22734729	454385.7	-50.03398	0.0000
FSIZE	-4.51E+08	987231.2	-457.3207	0.0000
LEV	-219323.4	2205.992	-99.42165	0.0000
LOSS	-7115180.	755585.4	-9.416778	0.0000
BIG4	2.68E+08	21688821	12.34593	0.0000
IDUM	-1.79E+09	1.54E+08	-11.65792	0.0000
YDUM	60012161	518160.6	115.8177	0.0000

Effects Specification

Cross-section fixed (orthogonal deviations)

Mean dependent var	-6305171.	S.D. dependent var	1.32E+08
S.E. of regression	6.61E+08	Sum squared resid	4.19E+20
J-statistic	54.46665	Instrument rank	75
Prob(J-statistic)	0.380819		

Source: Researcher's Computations (2024) Using EViews13 Software.

4.3 Discussion of the Regression Results.

Table 5 above shows the regression estimation results of the relationship between corporate governance structure alone (BODS, BODI, BODIV, BMET, BFE, MOWN, FOWN, IOWN, CEOME, CEOFE, T5, NFDIR, BB, ACFE, ACGD); the control variables (FAGE, FSIZE, LEV, LOSS, BIG4, IDUM, YDUM) and free cash flow of the 75 sampled firms.

A look at the coefficient (0.008605) of FCF1 (-1) shows that it is positively significant (t-Statistics = 6.692316 and $p= 0.0000$) at the 1% levels of significance. This result conforms to the extant literature that the dependent variable and its lag move in the same direction and must be significant (Egbadju & Jacob, 2022). The positive coefficient means that the current year profit is directly affected by previous period profit and this is a good sign. Again, since the p-value of Sargon statistic or J-Statistic (0.380819, that is, 38%) is higher than the threshold of 5% and 10% or even the 25% or more suggested by Roodman (2009), our model is free from the problem of instruments proliferation.

From the result above, 12 of the 15 corporate governance characteristics (BODS, BODI, BODIV, BMET, BFE, FOWN, IOWN, CEOFE, NFDIR, BB, ACFE and ACGD) statistically and significantly impacted free cash flow while 3 of the 15 (MOWN, T5 and CEOME) are not significant. Of those that are significant, (BODI, BODIV, BMET, BFE, IOWN, BB, ACFE and ACGD) are positive while (BODS, FOWN, CEOFE and NFDIR) are negative.

Specifically, BODI relationship with FCF1 is positively significant with a coefficient of $3.69E+08$, a t-Statistic of 32.70031 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BODI will increase FCF1. That is, the more the independent board is or the the more outside directors are in the board, the more free cash that is available for the firm. The sign or direction as well as the size or magnitudes are in line with our apriori expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BODI and FCF1. This result is in line with those of Nuriyanti and Trisnawati(2023) and Naserpoor et al. (2017).

BODIV relationship with FCF1 is positively significant with a coefficient of $5.69E+08$, a t-Statistic of 20.66090 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BODIV will increase FCF1. That is, the more the women in the board, the more free cash that is available for the firm. The sign or direction as well as the size or magnitudes are in line with our apriori expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BODI and FCF1. There is no previous literature reviewed that used this variable.

BMET relationship with FCF1 is positively significant with a coefficient of 40598087, a t-Statistic of 146.3961 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BMET will increase FCF1. That is, the more the board meets,, the more free cash that is available for the firm. The sign or direction as well as the size or magnitudes are in line with our apriori expectations. We, therefore, reject the null hypothesis of no significant relationship and

accept the alternative hypothesis that there is a significant relationship between BODI and FCF1. There is no previous literature reviewed that used this variable.

BFE relationship with FCF1 is positively significant with a coefficient of $3.00E+08$, a t-Statistic of 142.4451 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BFE will increase FCF1. That is, the more board members with financial expertise, the more free cash that is available for the firm. The sign or direction as well as the size or magnitudes are in line with our apriori expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BODI and FCF1. There is no previous literature reviewed that used this variable.

IOWN, BB, ACFE and ACGD which are positively significant with FCF1 can be interpreted in line with those of BODI, BODIV, BMET, BFE above

However, BODS relationship with FCF1 is negatively significant with a coefficient of -21091195, a t-Statistic of -59.38055 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BODS will reduce FCF1. That is, the more the board membership increases, the less free cash that is available for the firm.. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BODS and free cash flow. There is no previous literature reviewed that used this variable.

FOWN relationship with FCF1 is negatively significant with a coefficient of -50346581, a t-Statistic of -2.767010 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in FOWN will reduce FCF1. That is, the more foreign shareholdings increases, the less free cash that is available for the firm.. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between FOWN and free cash flow. This result is in line with that of Naserpoor et al. (2017)

CEOFE relationship with FCF1 is negatively significant with a coefficient of -8507807., a t-Statistic of -7.423540 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in CEOFE will reduce FCF1. That is, the more the CEO financial knowledge increases, the less free cash that is available for the firm.. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between CEOFE and free cash flow. There is no previous literature reviewed that used this variable.

NFDIR relationship with FCF1 is negatively significant with a coefficient of $-1.50E+09$, a t-Statistic of -162.2109 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in NFDIR will reduce FCF1. That is, the more the board foreign membership increases, the less free cash that is available for the firm... The sign or direction is contrary to our expectations

but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between NFDIR and free cash flow. There is no previous literature reviewed that used this variable.

All the control variables- FAGE, FSIZE, LEV, LOSS, BIG4, IDUM and YDUM- are statistically significant with FCF1.

4.4 Regression Diagnostics Test

4.4.1 Arellano and Bond Serial Correlation Diagnostic Tests of AR (1) and AR (2).

When an estimator uses lags as instruments with the assumption that the disturbance or error term is white noise, such an estimator would produce inconsistent results if the disturbance terms are indeed serially correlated (Arellano & Bond, 1991). Thus, it is very necessary to be sure of no autocorrelation by carrying out test statistics of no serial correlation by validating the instrumental variables through a second-order residual serial correlation test (Arellano & Bond, 1991). The AR (1) may be or may not be significant but AR (2) must never be insignificant at all. AR (2) is more important in evaluating our results as it shows whether there is second-order serial correlation. If AR (2) is significant, it indicates that some of the lagged dependent variables which might be used as instrumental variables are bad instrument and thus endogenous. Since the p-values of AR (1) = 0.3228 and AR (2) = 0.3154 in Table 7 above are greater than 0.05, we then accept the null hypothesis that there is no serial correlation

Table 6. Arellano-Bond Serial Correlation Test

Equation: Untitled

Date: 03/01/24 Time: 20:53

Sample: 2007 2022

Included observations: 1200

Test order	m-Statistic	rho	SE(rho)	Prob.
		-		
AR(1)	-0.002012	5	13027234.647425633	0.9984
		-		
AR(2)	-0.005067	2	48537704.957950793	0.9960

Source: Researcher's Computations (2024) Using EViews13 Software

4.5 Additional Tests of Robustness Comparing Five Models.

To test the robustness of our results, we model five scenarios using FCF2, FCF3, FCF4, FCF5 and FCF6.

Table 7

The Regression Results of the Five Models Using Their Probability Values

VARIABLES	FCF2	FCF3	FCF4	FCF5	FCF6
FCF(-1)	0.0000	0.0000	0.0000	0.0000	0.0000
BODS	0.0000	0.0000	0.0000	0.0000	0.0000
BODI	0.3204	0.0000	0.0000	0.0000	0.0000
BODIV	0.0000	0.0109	0.0000	0.0000	0.0000
BMET	0.0000	0.0000	0.0000	0.0000	0.0000
BFE	0.0000	0.0000	0.0000	0.0000	0.0000
MOWN	0.0000	0.0801	0.0000	0.0000	0.0000
FOWN	0.0000	0.0000	0.0000	0.0000	0.0000
IOWN	0.0000	0.0757	0.0000	0.0000	0.0000
T5	0.8136	0.7130	0.0001	0.9979	0.0134
NFODIR	0.0000	0.0000	0.0000	0.0000	0.0000
BB	0.0000	0.0000	0.0000	0.0000	0.0000
CEOME	0.0000	0.0001	0.0000	0.0000	0.0000
CEORE	0.0000	0.0000	0.0000	0.0000	0.0000
ACFE	0.0004	0.0000	0.0000	0.0000	0.0000
ACGD	0.0000	0.0000	0.0000	0.0000	0.0000
FAGE	0.0000	0.0000	0.0000	0.0000	0.0000
FSIZE	0.0000	0.0000	0.3244	0.0000	0.0000
LEV	0.0000	0.0000	0.0000	0.0000	0.0000
LOSS	0.0000	0.0000	0.0000	0.0000	0.0000
BIG4	0.0000	0.0000	0.0000	0.0000	0.0000
IDUM	0.0006	0.5300	0.0000	0.0000	0.0000
YDUM	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Researcher's Computations (2024) Using EViews13 Software

Where the five scenarios were taken into considerations, the regression results in Table 7 above did not significantly differ from that of Table 5 above. It should be observed that, at least, 12 variables of the 15 variables are statistically significant with FCF. This attest to the robustness of the fact that corporate governance characteristics considered in this study has helped mitigating agency problem involving free cash flows for the period under consideration.

Conclusion and Recommendations

This study investigates if there is any relationship between certain corporate board characteristics and financial performance of non-financial listed firms in Nigeria. It uses secondarily sourced panel data over the period from 2007 to 2022 of 75 such firms listed on the floor of the Nigerian Exchange Group (NXG). The generalized method of moments (GMM) results reveal that board independence, board gender diversity, board meetings, board financial expertise, institutional ownership, board busyness, audit committee financial expertise and audit committee gender diversity are positively significant with free cash flow; board size, foreign ownership, chief executive officer (CEO) with financial expertise and number of foreign directors are negatively significant while managerial ownership, top5 ownership or ownership concentration and chief executive officer (CEO) with military experience are not significant.

Based on the results above, the study recommends the followings:

- Management should maintain or increase the present level of BODI, BODIV, BMET, BFE, IOWN, BB, ACFE and ACGD since these variables increase free cash flow.
- Investigate the reason BODS, FOWN, CEOME and NFDIR negatively affect free cash flow.
- Investigate the reason MOWN and T5 could not positively influenced free cash flow.

References

- Abdurrashid, I., Adekanmi, A. D., Oladipo, O. N. & Rildwan, O. B. (2023). Corporate governance and firm performance: evidence from deposit money bank in Nigeria. *E u r o E c o n o m i c a*, 1(42), 138-151
- Adeola, F. K., Zubairu, A. D. & Ame, J. O. (2023). Effect of board characteristics on capital structure decision of listed insurance firms in Nigeria. *International Journal of Education, Business and Economics Research (IJEER)* 3(3): 37-53.
- Adinehzadeh, R. & Jaffar, R. (2013). Corporate governance and firm free cash flows: Evidence from Malaysia. *Information Management and Business Review*, 5 (11), 531-537,
- Al-Absy, M. S. M. & Nada, H. A. (2023). The interaction effect of nomination committee's effectiveness on board of directors' characteristics and firm performance. *Administrative Sciences* 13: 135
- Arellano, M. & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*. 58(2): 277-297.
- Bagh, T., Khan, M. A., Meyer, N. & Riaz, H. (2023). Impact of boardroom diversity on corporate financial performance. *HUMANITIES AND SOCIAL SCIENCES COMMUNICATIONS* |<https://doi.org/10.1057/s41599-023-01700-3>

- Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, 8 (3), 274-289
- Becker, T., Atinc, G., Breaugh, J., Carlson, K., Edwards, J. & Spector, P. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *J ORGAN BEHAV* 37(2):157–167
- Bogdan , V., Popa, D-N., & Belenes, M. (2022). The complexity of interaction between executive board gender diversity and financial performance: A panel analysis approach based on random effects. *Hindawi Complexity*, 2022, 1-20.
- Chong, L. Y. J. & Jong, L. Y. C. S. (2023). Board capital and firm performance. *MATEC Web of Conferences* 377, 1-10.
- Chung, D. J., Kim, B. & Park, B. G. (2018). How do sales efforts pay off? Dynamic panel data analysis in the Nerlove-Arrow framework. (*n. d.*), 1-50
- Cinelli, C., Forney, A. & Pearl, J. (2022). A crash course in good and bad controls. Forthcoming, *Journal Sociological Methods and Research*, 1-30.
- Dang, G. T. T., Huu, A. N. & Nguyen, T. P. (2023). Impact of corporate governance on firm value: empirical evidence from Vietnam. *AEBMR* 238, 60–76.
- De Battisti, F. & Siletti, E. (2018.). On the use of control variables in PLS-SEM. (*n. p.*)
- Debie, R. (2022). Cash management and financial performance of listed manufacturing firms in Nigeria. *Accounting and Taxation Review*, 6(2),12-23.
- Demaki, A., Imasuen, G. O., Festus, O., & Eromafuru, E. G. (2023). Directors’ observable characteristics and firms’ performance in Nigeria: A panel analysis. *Academy of Entrepreneurship Journal*, 29(S4), 1-12
- Egbadju, L. U. & Jacob, R. B. (2022). Corporate governance mechanisms and performance of quoted non-financial firms in Nigeria. *International Journal of Intellectual Discourse (IJID)*, 5(4), 135-147.
- Egbadju, L. U. (2022). *Corporate governance mechanisms and tax avoidance of quoted non-financial firms in Nigeria.*(Doctoral thesis, Ignatius Ajuru University of Education, Port Harcourt, Nigeria. Open Access).
- Egbadju, L. U. (2023). Cash management and financial performance of quoted nonfinancial firms in Nigeria: A dynamic robust least squares regression approach. *Journal of Accounting and Financial Management*, 9(8), 81-96.
- Egbadju, L. U. (2023).Cash management and financial performance of quoted nonfinancial firms in Nigeria: A dynamic robust least squares regression approach. *Journal of Accounting and Financial Management*, 9(8), 81-96.
- El-feky, M. I. (2023). Board gender diversity and firm’s financial performance: Further evidence from emerging capital market. *Journal of Business and Environmental Sciences*, 2(1), 42-65.
- Ghardallou, W., Borgi, H. & Alkhalifah, H. (2020). CEO characteristics and firm performance: A study of Saudi Arabia listed firms. *Journal of Asian Finance, Economics and Business*, 7(11), 291–301.

- Govindan, K., Karaman, A. S., Uyar, A. & Kilic, M. (2023). Board structure and financial performance in the logistics sector: Do contingencies matter? *Transportation Research*, 1-17
- Gujarati, D. N. (2003). *Basic econometrics*. McGraw-Hill Companies, New York
- Gujarati, D.N. (2004). *Basic Econometrics* (pp 359). New Dehli: Mc-Graw Hill Publishers.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- Harvest, M. J. & Sophia, A. (2022). Cash management practices and financial performance of listed deposit money banks in Nigeria. *Management, Marketing and Accounting Research Journal*, 9(2), 1-19.
- Hassan, Z. & Aziz, A. A. (2023). Do board characteristics matter to achieve sustainable profit growth? a study of the listed companies in Bursa Malaysia. *Indonesian Journal of Business, Technology and Sustainability*, 1(1), 40-46
- Hunermund, P. & Louw, B. (2020). On the nuisance of control variables in regression analysis, (*n. p.*), 1-17
- Ismail; M. I. & Rasheed, H. A. (2021). Robust Regression Methods / a Comparison Study. *Turkish Journal of Computer and Mathematics Education* , 12(14), 2939-2949.
- Jensen, M. C. & Meckling, W. H.: (1976). Theory of the firm: managerial behaviour, agency costs and ownership structure“, *Journal of Financial Economics*, 3, 306-360.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323-329.
- Ketokivi, M., & McIntosh, C. N. (2017). Addressing the endogeneity dilemma in operations management research: Theoretical, empirical, and pragmatic considerations. *Journal of Operations Management*, (52), 1-14.
- Khan, K. M. & Mahmood, Z. (2023). Impact of corporate governance on firm performance: A case of Pakistan stock exchange. *Liberal Arts and Social Sciences International Journal (LASSIJ)*, 7(1), 24-38.
- Li, J., Ding, H., Hu, Y. & Wan, G. (2021). Dealing with dynamic endogeneity in international business research. *Journal of International Business Studies*, 52, 339–362
- Lin, D. & Lin, L. (2016). How does corporate governance affect free cash flow? *Journal of Applied Finance & Banking*, 6 (3), 145-156
- Maeso-Fernandez, F., Osbat, C. & Schnatz, B. (2004). Towards the estimation of equilibrium exchange rates for CEE acceding countries: Methodological issues and a panel cointegration perspective. *Working paper Series No. 353 /*
- Naserpoor, M., Khayri, M. & Momeni, A. (2017). Evaluating the effect of corporate governance on free cash flows in companies accepted to Tehran’s securities exchange market. *World Journal of Environmental Biosciences*, 6 (SI) 21-28

- Ngo, M. T., Le, T. N., Nguyen, N. T. & Luu, T. T. T. (2023). Board independence and financial performance: empirical evidence on mediating role of market competition from the Vietnamese market. *International Journal of Professional Business Review*, 8(5), 01-23
- Nguyen, V. C. & Huynh, T. N. T. (2023). Characteristics of the board of directors and corporate financial performance—Empirical evidence. *Economies* 11: 53. 1-15.
- Nielsen, B. B. & Raswant, A. (2018). The selection, use, and reporting of control variables in international business research: A review and recommendations. *Journal of World Business* xxx (xxxx) xxx–xxx.
- Nuriyanti, A. F. D. & Trisnawati, R. (2023). The effect of corporate governance, leverage and free cash flow on earnings management (Empirical study of manufacturing companies listed on the Indonesia Stock Exchange for the 2018-2021 Period). *The International Journal of Business Management and Technology*, 7 (1), 133-142
- Okoye, E. & Ofoegbu, G. N. (2006). Regulation of financial reporting and corporate governance in Nigeria: A critical review. *Journal of Global Accounting*, 2 (1), 1-20
- Okpolosa, M. O. (2023). Board elements as a predictor to financial performance of listed agricultural firms in Nigeria. *International Journal of Advancement in Accounting, Management and Human Development*, 8(1), 12-20
- Rizvi, S. M. R., Tahir, S. H., Raza, H., Ali, A. F., & Alvi, A. R. (2023). Board Characteristics and Firm Performance: A Configurational Analysis. *JISR management and social sciences & economics*, 21(1), 69–91.
- Roodman, D. (2009). A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics*, 71(1), 135-158.
- Santoso, A. (2023). The effect of free cash flow and leverage on earnings management: Moderating role of good corporate governance. *Asian Management and Business Review*, 3 (1), 14-23
- Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39-42
- Suffian, M. T. M., Osman, A. H., Sanusi, Z. M. & Ridzuan, A. R. (2020). The effects of earnings management, free cash flow and industry on firm performance: empirical evidence from shariah-compliant companies in Malaysia. *International Journal of Academic Research in Accounting, Finance and Management Sciences* 10 (1), 367-377.
- Ukhriyawati, C. F., Ratnawati, T. & Riyadi, S. (2017). The influence of asset structure, capital structure, risk management and good corporate governance on financial performance and value of the firm through earnings and free cash flow as an intervening variable in banking companies listed in Indonesia Stock Exchange. *International Journal of Business and Management*, 12 (8), 249-260.
- Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3): 581–606.