Business Strategy-Strategic Deviance- Business Complexity and Managerial Ability on Accounting-Based Performance Extremism of Quoted Non-Financial Firms in Nigeria

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Abstract
This study investigates the relationship between business strategy, strategic deviance, business complexity and managerial ability on accounting-based performance extremism product market competition and performance extremism of listed non-financial firms in Nigeria. Secondarily sourced panel data over the period from 2007 to 2022 of 30 of those firms on the floor of the Nigerian Exchange Group (NXG) was used. The estimated generalized least squares (EGLS) results reveal that two of the variables (SD and HHIS) are negatively significant with performance extremism; four variables (IAROA, IASR, CEOC and CEOT) are positively and statistically significant with it while BS, MNC, SUB, MASCORE and MARANK) are statistically not significant. The paper concludes with some recommendations

Keywords: *Business strategy, strategic deviance, business complexity, managerial ability, non-financial firms*

1.0 Introduction

Business strategy (BS) is a set of competitive moves and actions that a business uses to attract customers, compete successfully, strengthen performance, and achieve organizational goals. It is nothing more than a master plan that the management of a company implements to secure a competitive position in the market, carry on its operations, please customers, and achieve the desired ends of the business. In business, it is the long-range sketch of the desired image, direction, and destination of the organization. It is a scheme of corporate intent and action, which is carefully planned and flexibly designed with the purpose of achieving organizational goals. Habib et al. (2023) defined BS as a method or pattern for allocating resources that is largely concerned with figuring out how to turn special skills into a competitive advantage.

Moreover, various authors as cited in Habib et al. (2023) have looked at BS in terms of cost leadership, product differentiation; in terms of close customer relationships, exploration and exploitation; in terms of operational excellence, and the organization's rate of market and product change. Prospector-type strategy, defender-type strategy and analyzer-type strategy have been identified in the extant literature. Also, Venkatraman (1989) as cited in Gupta and Toni(1996) categorized the literature on business strategy measurement approaches into three types:(1)narrative approach, (2) classificatory approach, and (3) comparative approach. The managerial choice to pursue a specific business strategy has an impact on business risk, which in turn influences fluctuations in firm-level performance (Miles & Snow, 2003).

Strategic deviance refers to the extent to which corporate strategy deviates from industry concentration or mainstream trends. to measure the deviant strategy. On the other hand, Finkelstein and Hambrick (1990) as cited in Habib et al., 2023) defined strategy deviation as a resource allocation pattern that deviates from peers in the industry.

"Business complexity" refers to the way that an organization's technologies, people, goods, and data are all interconnected to form a large network. It frequently follows from positive corporate changes like expansion, innovation, and expanding product portfolios. To put it simply, an organization's capacity to take on new clients, expand, and integrate new technologies leads to a rise in internal dependencies and connections.

Managerial ability is a set of qualities and attributes known as managerial ability in order to perform their job well. One of these skills is the inclination to carry out executive duties inside an organization, with a focus on crisis prevention and prompt resolution of issues as they emerge. The best methods for honing one's managerial skills are education and practical experience in management roles. The smooth running of the company as a whole depends heavily on the manager's interpersonal skills and capacity for effective supervision of their staff.

The task of leading and managing the company ultimately falls on higher management. Managers in occupation have a significant impact on company decision-making across a range of domains, including as capital raising, investment selection, and day-to-day operations. However, while corporate governance structures and their effects on economic outcomes have been studied, the caliber of managerial decisions—which ultimately affect shareholder capital—has received comparatively less attention (Atawnah et al., 2023). If one important way that finance providers ensure that they will receive a return on their investment is by matching management interests with shareholder interests, then another important way that this convergence occurs is through the caliber of management within a company. This is because poor management would put investor capital at risk, as would incompetent or inept strategists who take on unsound projects.

Many studies on how business strategy, strategic deviance, business complexity and managerial ability impacts corporate performance has attracted researchers' attention leading to a range of study designs and findings which found strong relationship between them, both in developed (Gupta and Toni, 1996; Chen, 2021; Atawnah et al., 2023) and developing economies (Saliu & Taqi, 2023; Chen et al., 2023), with mixed outcomes.

This study differs from others with respect to managerial ability measurements. While Atawnah et al. (2023) used MASCORE and MARANK to measure managerial ability; and Bhutta et al. (2021) used MASCORE, IAROA and CEO Pay; others used only one variable. This study however uses six (6) different measurements of managerial ability. 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 business strategy, strategic deviance, business complexity and managerial ability have no significant relationship with performance extremism 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.

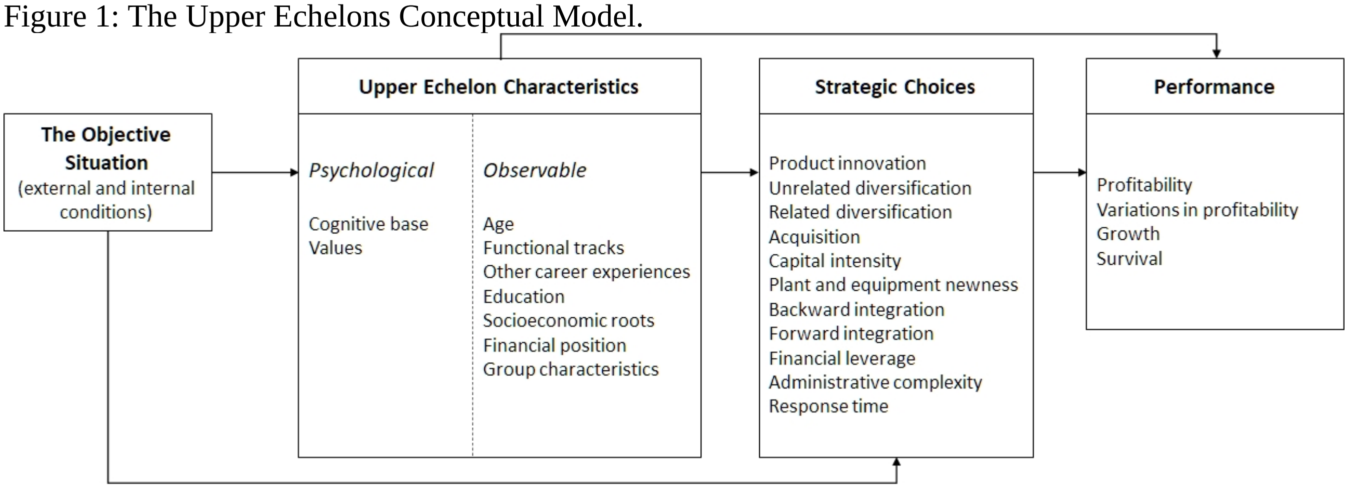
2.0 Review of Related Literature.

2.1 Theoretical Underpinning.

2.1.1 Upper Echelon Theory.

Organization theory research has demonstrated that senior management teams' beliefs and perspectives are reflected in their organizations (Hambrick & Mason, 1984). The upper echelon approach offers insights into the values and beliefs of dominant coalition members as well as the processes by which such beliefs and values develop by identifying the variables that impact the decision-making of senior managers. This idea holds that managers' beliefs and values serve as a barrier between their perception of the environment and the real one (Hambrick & Mason, 1984). According to Finkelstein and Hambrick (1990) as cited in Habib et al., 2023), the perspective of the upper echelons, in particular, includes three subordinate ideas which are: (1) strategic outcomes reflect the values and cognitive foundation of senior managers; (2) observable demographic traits are valid markers of executives' cognitive frames and can be used to forecast strategic outcomes; and (3) a more accurate forecast of strategic outcomes is produced by analyzing the features of a company's upper echelons as a whole, that is, the entire top management team, rather than looking only at the CEO.

Figure 1: The Upper Echelons Conceptual Model.



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2.2 Empirical Literature

Saliu and Taqi (2023) empirically investigated whether managerial ability (MASCORE) has affected corporate performance of firms in Pakistan. The study used secondary panel data over the period from 2014 to 2021 obtained on 50 South Asian manufacturing firms. The OLS regression results indicated that MASCORE was positively significant with ROE.

Chen et al. (2023) undertook a research to determine if there is any relationship between managerial ability (MASCORE) has affected corporate performance of firms in China. The samples consist of publicly listed Chinese A-Share firms between 2007 and 2019. The OLS regression results indicated that MASCORE was positively significant with ROA.

Atawnah et al. (2023) studied whether there is any relationship between managerial ability (MASCORE, MARANK) and corporate performance of firms in the United States. The researchers used annually sourced panel data collected over the period from 1980 to 2017 on 76,746 firm-year observations from Compusat database. The OLS regression results indicated that MASCORE and MARANK were positively significant with Tobin'sQ.

Bhutta et al. (2021) empirically tested the impact of managerial ability (MASCORE, IAROA and CEO Pay) on financial performance of firms in Pakistan. The study made use of sampled 246 listed non-financial firms from 2009 to 2017 financial years making a total of 2,214 firm-year observations. The results of the Two-Stage Least Squares (2SLS) showed that all the managerial ability measurements positively and significantly impacted ROA.

Ting et al. (2021) attempted an empirical study of how managerial ability (MASCORE) on financial performance of firms in Taiwan. The study used secondary panel data making 6384 firm-year observations over the period from 2005 to 2018. The OLS regression results indicated that MASCORE positively and significantly affected firm performance.

Chen (2021) studied whether there is any relationship between deviant strategy and corporate innovation performance in China. The researcher used annually sourced panel data collected over the period from 2007 to 2017 on the Chinese A-Shares listed firms. The OLS regression results indicated that deviant strategy positively significant impacted corporate innovation performance.

Pamela and Fasipe (2015) studied whether there is any relationship between business complexity and corporate performance of firms in the United States. The researchers used annually sourced panel data collected over the period from 1995 to 2010 from Compusat database. The OLS regression results indicated that all business complexity measures (MNC, Subsidiaries, HHIS and Top 100 Firm) were positively significant with ROE.

Gupta and Toni (1996) attempted an empirical study of how business strategy and manufacturing flexibility influenced organizational performance relationships in the United States.
The study used primary data totally 1,600 questionnaires mailed nationwide to about five types of U.S. manufacturing firms with 250 or more employees. The PATH analysis results revealed that business strategy positively and significantly improved organizational performance.

3.0 Methodology

3.1 Research Design

Using the ex-post facto research design, often referred to as the descriptive or correlational research design, the study investigates if there is any relationship between ownership structure and firm performance of companies in Nigeria. The sample of this study consists of 30 non-financial firms listed on the floor of the Nigerian Exchange Group (NXG). The secondarily sourced data of the sampled firms was obtained from their annual reports gathered over a period of sixteen (16) years, from 2007 to 2022, totaling 480 firm-year observations.

3.2 Measurement and Definitions of Variables.

Table1

S/N		Definitions	Variable Types	Measurements	
1	ABPE	Accounting-based performance extremism	Dependent	See 3.2.1 for Details	None of the studies reviewed used it
2	ABPE(-1)	Previous period or last year's value of accounting-based performance extremism	Independent	Lag1 of accounting-based performance extremism	-

3	BS	Business Strategy Composite Index	Independent	See 3.2.2 for Details	Gupta & Toni (1996)
4	SD	Strategic Deviance Composite Index	Independent	See 3.2.2 for Details	Chen (2021)
Business Complexity Variables					
5	MNC	Multi-National Corporations	Independent	A dummy variable which takes the value of "1" if the firm is a multinational firm operating in international market; otherwise "0"	Pamela & Fasipe (2015)
6	HHIS	Herfindahl-Hirschman Index (HHI) using firms and industry sales values	Independent	See 3.2.2 for Details	Pamela & Fasipe (2015)
7	SUB	Subsidiary	Independent	Total number of subsidiaries which the firm has.	Pamela & Fasipe (2015)
Managerial Ability Variables					
8	MASCORE	Managerial Ability Score	Independent	See 3.2.2 for Details	Atawnah et al. (2023); Bhutta et al. (2021)
9	MARANK	Managerial Ability Rank	Independent	See 3.2.2 for Details	Atawnah et al. (2023)
10	IAROA	Industry-Adjusted Return on Assets (ROA)	Independent	ROA less Industry Average	Bhutta et al. (2021)
11	IASR	Industry-Adjusted Share Return(Share Price$_t$ /Share Price$_{t-1}$ - 1)	Independent	Share Return less Industry Average	None of the studies reviewed used it

12	CEOC	Chief Executive Officer's Compensation	Independent	Total salaries and bonuses of CEO	Bhutta et al. (2021)
13	CEOT	Chief Executive Officer's Tenure	Independent	Total number of years CEO has spent on that position	None of the studies reviewed used it
Control Variables					
14	SGROWTH	Sales growth	Control	$Sales_t$ /$Sales_{t-1}$ - 1	-
15	RISK	Volatility of return on assets(ROA)	Control	Standard deviation of return on asset(ROA)	-
16	FAGE	Firm age	Control	Number of years since incorporation.	-
17	SIZE	Firm size	Control	Log of total assets	-
18	LEV	Leverage	Control	Total debts/ Total assets	-
19	C				

Source: Researcher's Computations from Extant Literature.

3.2.1 Derivation of the Dependent Variable (Accounting-Based Performance Extremeness)

This study uses three accounting-based performance measurements to compute extreme performance. These are: a) Return on Assets (ROA); b) Return on Equity (ROE) and c) Net Profit Margin (NPM)

a) Return on Assets (ROA), a profitability measure, indicates how successful a business may be while using its assets. It evaluates the degree to which a company's management generates income from the total assets shown on the statement of financial position. The greater the figure, which expresses ROA as a percentage, the more skillfully the management of a company produces profits by managing its balance sheet. Generally speaking, companies with lower profit margins own more assets than those with greater profit margins. Comparing similar firms is the simplest way to assess return on assets (ROA); for instance, a company with numerous assets might have a lower ROA than a related business with fewer assets and the same profit margin, which could

$$ROA = \frac{\text{Profit Before Tax}}{\text{Total Assets or Average Assets.}}$$

b) Return on equity (ROE), a measure of financial performance, is computed by dividing net income by shareholders' equity. Since owners' equity is determined by subtracting debt from assets, return on equity (ROE) is sometimes referred to as return on net assets. It is a measure of a company's profitability and efficiency in making a profit. A higher ROE indicates that management of the company is more successful in generating growth and revenue from its equity capital. ROE is calculated by dividing net income by shareholders' equity as shown below.

$$ROE = \frac{\text{Profit Before Tax}}{\text{Total Shareholders' Equity.}}$$

c) Net Profit Margin (NPM): A company's net profit margin indicates the portion of each naira in revenue that it turns a profit on. A company can utilize a variety of metrics, such net margin, to inform data-driven decisions about how to divide its revenue. The net profit margin of a company's earnings is stated as a percentage of its total revenue. Net profit margin can be displayed as a decimal, even though it is typically expressed as a percentage. When comparing the net margins of different companies, it's important to include all pertinent factors because profit margins differ by industry.

$$NPM = \frac{\text{Net Profit}}{\text{Total Revenue.}}$$

Thus, the following steps are undertaken to obtain the value for performance extremism, extreme performance or performance extremeness as the case may be.
Step1: Calculate the value for each performance indicator (ROA, ROE and NPM) for each firm and for the sampled period, that is, for the firm-year observations.
Step2: Normalize each indicator by subtracting the industry-year average/mean and then divide the outcome with the industry-year standard deviation.
Step3: Take the absolute value of the results in Step2 above.
Step4: Finally, take the average value of all the performance indicators (ROA, ROE and NPM) to form a composite value for performance extremism. That is, sum the three indicators (ROA, ROE and NPM) and then divide by three. The larger the value, the greater the firm has deviated from the industry concentration or the mainstream trend.

3.2.2 Derivation of the Independent Variables

3.2.2.1. Business Strategy:

The Business Strategy Score can be calculated using the following steps below:
Step1: Calculate the value for each of the six strategy dimensions for each firm and for the sampled period, that is, for the firm-year observations. These six variables are: (a) R&D/Total Sales. (b) Number of employees/Total Sales. (c) Sales Growth (the difference between the current year's

sales and the last year's sales divided by last year's sales); (d) Marketing Expenses/Total Sales (e) Standard Deviation of the number of employees in the past five years. (f) Net Property, Plant and Equipment/Total Assets.
These six variables computed above from a firm's business operations represent certain elements of a firm's business strategies.
Step2: Compute a five-year rolling average for each of the six strategy proxies calculated in Step 1 above.
Step3: Divided or rank each strategy-proxy into ten deciles within each industry in each year and assigned a score of 1 to the lowest deciles and 10 to the highest deciles.

Step4: Finally, a composite strategy score was computed by adding the scores of a firm across the six proxies. Thus, to get a score of 6, a firm has to score a 1 in each of the six dimensions(which is the lowest possible score-defender) or to get a score of 60, a firm has to score a 10 in each of the six dimensions(which is the highest possible score, that is, prospecter).

3.2.2.2. Strategic Deviance Score.

The Strategic Deviance Score can be calculated using the following steps below:
Step1: Calculate the value for each of the six strategy dimensions for each firm and for the sampled period, that is, for the firm-year observations. These six index variables are: (a) Cost of Sales/Total Sales. (b) R&D/Total Sales. (c) Advertising Expenses/Total Sales. (d) Intangible assets/Total Sales. (e) Total Liabilities/Book Value of Equity. (f) Net Property, Plant and Equipment/Original Property, Plant and Equipment.
These six variables computed above from a firm's business operations represent certain elements of a firm's business strategies.
Thus, the following steps are undertaken to obtain the value for strategic deviance.
Step1: Calculate the value for each of the six strategic indexes for each firm and for the sampled period, that is, for the firm-year observations.
Step2: Normalize each index by subtracting the industry-year average/mean and then divide the outcome with the industry-year standard deviation.
Step3: Take the absolute value of the results in Step2 above.
Step4: Finally, take the average value of all the indexes to form a composite value for strategic deviance. That is, sum the six indexes and then divide by six. The larger the value, the greater the firm has deviated from the industry concentration or the mainstream trend.

3.2.2.3. HHIS = Herfindahl-Hirschman Index (HHI) Using Firms and Industry Sales Values.
The Herfindahl Hirschman Index (HHI) is a statistical indicator that illustrates how market share is allocated among index companies and assesses the level of competition in a market or industry. The level of market competition can have a significant impact on pricing decisions for products and services that a company offers as well as for strategic planning. A higher HHI means a lower competition and vice versa, a lower HHI means a higher competition.

The HHI for sales can be calculated using the following steps below:

Step1: Add the values for each company's sales revenue for the sampled periods.
Step 2: Add the values for all companies' sales revenue within an industry for the sampled periods.
Step 3: Divide Step 1 by Step 2 above to obtain the market share of each company.
Step 4: Square the value obtained in Step 3 above. That is, square each company's market share.
Step 5: Sum or add up all the squared market share of each company in Step 4 above to obtain the Herfindahl-Hirschman Index (HHI).

3.2.2.4. Managerial Ability Score:

Managerial ability is the capacity of managers to generate output using existing amount of firm's inputs. Managerial ability score of Demerjian et al. (2012) is widely used presently as measurement based on the two-stage data envelopment analysis (DEA) method.
The first stage of it is to calculate the firm's total efficiency or ability (θ) using data envelopment analysis (DEA) as specific in the model below:

$$MaxO = \frac{\text{Total Sales/ Total Revenue}}{COGS + SGA + ADV + PPE + R\&D\ Costs + INTANG + GIL}$$

Where MaxO = Total Firm Efficiency/Ability. Total sales is the firm's output variable while the input variables are: costs of goods sold(COGS); selling and administrative expenses (SGA); property; advertising expenses; plant and equipment (PPE); investment in research & development(R&D costs);net intangible assets (INTANG) and goodwill and impairment loss (GIL).
The second stage is to regress the firm's total ability or production efficiency on some firm-level factors which could affect production efficiency. The residuals from the regression results those factors not captured in our model and it represents the ability of the management of the firm.
Thus, managerial ability is the residual of the following regression:

$$MaxO = \beta o + \beta_1 FCF + \beta_2 MS + \beta_3 AGE + \beta_4 SIZE + \beta_5 BUSEG + \beta_6 GDP + \beta_7 IDUM + \beta_8 YDUM + +\varepsilon$$

Where MaxO = Total Firm Efficiency/Ability; Free Cash Flow(Operating Cash Flow-Capital Expenditure-Investment-Dividend); MS = Market Share(Individual firm's sales over a period/Industry sales of all the firms); Age = Firm age; Size = Firm size; Buseg = Number of business segments; GDP = Gross domestic products; Industry dummy; Year dummy.

3.2.2.5. Managerial Ability Rank: Managerial ability rank is the deciles rank from 1 to 10 (by industry and year) of the residual obtained from the regression result in 3.2.2.4 above.

3.3 Model Specification

The functional equation of performance extremism to test the eleven (11) hypotheses specified is stated as in equation 1:

ABPE = f (BS, SD, MNC, HHIS, SUB, MASCORE, MARANK, IAROA, IASR, CEOC, CEOT) (Eq1)

3.3.1. 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.

Therefore, introducing the five firm-specific control variables give rise to equation 2 as:

ABPE = f (BS, SD, MNC, HHIS, SUB, MASCORE, MARANK, IAROA, IASR, CEOC, CEOT, SGROWTH, RISK, FAGE, SIZE, LEV) (Eq2)

The functional testable model will be derived as:

$$ABPE = \beta o + \beta_1 BS + \beta_2 SD + \beta_3 MNC + \beta_4 HHIS + \beta_5 SUB + \beta_6 MASCORE + \beta_7 MARANK + \beta_8 IAROA + \beta_9 IASR + \beta_{10} CEOC + \beta_{11} CEOT + \beta_{12} SGROWTH + + \beta_{13} RISK + \beta_{14} FAGE + \beta_{15} SIZE + \beta_{15} LEV + \varepsilon \quad (Eq3)$$

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

$$ABPE_{it} = \beta o + \beta_1 BS_{it} + \beta_2 SD_{it} + \beta_3 MNC_{it} + \beta_4 HHIS_{it} + \beta_5 SUB_{it} + \beta_6 MASCORE_{it} + \beta_7 MARANK_{it} + \beta_8 IAROA_{it} + \beta_9 IASR_{it} + \beta_{10} CEOC_{it} + \beta_{11} CEOT_{it} + \beta_{12} SGROWTH_{it} + \beta_{13} RISK_{it} + \beta_{14} FAGE_{it} + \beta_{15} SIZE_{it} + \beta_{16} LEV_{it} + \varepsilon_{it} \quad (Eq4)$$

3.4 Data Analysis using Dynamic Estimated Generalized Least Squares (DEGLS) Technique:

The ordinary least squares (OLS) has been an important method of prediction ever known to mankind since it was invented in 1795 by the mathematician Carl Friedrich Gauss, and later on rediscovered and popularized by another mathematician known as Adrien-Marie Legendre in 1805 (ClockBackward, 2009). The OLS regression model is built on certain assumptions such that if any of these assumptions are violated, then OLS estimator may no longer be Best Linear Unbiased Estimate (BLUE) and so the generalized least squares (GLS) was developed towards the mid-twentieth centuries by Alexander Aitken in 1936 (Virgantari et al., 2019). The GLS regression is an extension of the normal linear OLS estimation designed with some level of unequal error variances (heteroscedastic), not equal or constant variance (homoscedastic) and correlations between the residuals or error terms (serial correlation) in mind. The GLS and OLS estimators are the same in the absence of autocorrelation and heteroskedasticity and so they differ with respect to the error term assumptions which the GLS estimator was improvised to tackle. Thus, the GLS estimator is a generalization of the OLS estimator which transforms it to a new estimator that is more efficient, consistent, unbiased and asymptotically normal (Priya & Riya, 2017).

A dynamic regression model is designed to solve some problems which the static models are not capable of solving. For examples, variables with unit roots (non-stationary variables), variables with endogeneity problem, variables with serial correlation especially second order, problem of small sample sizes cannot be effectively and efficiently estimated by the classical regression of OLS because it was built on certain strong assumptions which are not realistic. A dynamic GLS performs better in both homogenous and heterogeneous panels which ensure that the estimation is asymptotically efficient and simpler to compute **(**Madaleno & Moutinho, 2021).

By including the lagged value of the dependent variable, that is, $ABPE_{it-1}$, due to unobserved heterogeneity transforms the static model to a dynamic one. That means, including the lagged dependent variable to equation 4, we have equation 5 below:

$$ABPE_{it} = \beta o + \beta_1 ABPE_{it-1} + \beta_2 BS_{it} + \beta_3 SD_{it} + \beta_4 MNC_{it} + \beta_5 HHIS_{it} + \beta_6 SUB_{it} + \beta_7 MASCORE_{it} + \beta_8 MARANK_{it} + \beta_9 IAROA_{it} + \beta_{10} IASR_{it} + \beta_{11} CEOC_{it} + \beta_{12} CEOT_{it} + \beta_{13} SGROWTH_{it} + \beta_{14} RISK_{it} + \beta_{15} FAGE_{it} + \beta_{16} SIZE_{it} + \beta_{17} LEV_{it} + \varepsilon_{it} \quad \text{(Eq5)}$$

Where the definitions are as stated in Table2 above.

β_1 to β_{17} are the beta coefficients of the instrumental, independent and control variables. From this study, we expect β_1 to β_{17} to be greater than zero.

ε_{it} = Error term for year ‘i’ in timer ‘t’

4.0. Method of Data Analysis

Data collected are analyzed using EViews 13 in the following order: univariate data analyses or descriptive statistics; bivariate data analysis or correlation analysis; unit roots test, estimation of the models; performance of some additional analysis and diagnostics tests.

4.1 Univariate Data Analyses (Descriptive Statistics)

The statistics in Table 2 below, which is based on equation1 above, show that the mean values of the variables as well as the maximum values. Since the mean values are lower than the maximum values, it confirms that there are no outliers in our data. The Jarque-Bera Statistics and its Probability of 0.000000 for all the variables show that the distribution is not normal. However, Ghasemi and Zahediasl (2012) noted that, in accordance with the central limit theorem (CLT), violating the normality assumption shouldn't be a significant problem once the observation is 100 and above. Our observation is 480, and so normality assumption does not matter here.

	ABPE	BS	SD	MNC	HHIS	SUB	MASCORE	MARANK	IAROA
Mean	0.007921	16.84810	0.634687	0.533423	0.458053	5.229612	0.336609	5.160338	-0.068553
Median	0.128741	17.00000	0.574122	1.000000	0.362714	5.000000	-0.292363	5.000000	-0.079695
Maximum	2.733328	23.00000	2.065442	1.000000	0.973609	20.00000	266.5352	10.00000	0.211914
Minimum	-3.289100	10.00000	0.133670	0.000000	0.128101	0.000000	-74.28143	1.000000	-0.566747
Std. Dev.	0.813370	2.702697	0.291661	0.486971	0.310798	3.837437	14.68202	3.069255	0.081603
Skewness	-0.563132	-0.195739	1.203785	-0.136809	0.700316	1.474008	12.67467	0.220526	-1.360927
Kurtosis	4.196025	2.541324	5.069700	1.069374	1.888174	6.168756	234.7784	1.710620	10.91395
Jarque-Bera	53.30416	7.181855	199.0810	75.09312	63.15901	369.9534	1073685.	36.67633	1383.273
Probability	0.000000	0.027573	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	3.754389	7986.000	300.8415	252.8425	217.1172	2478.836	159.5525	2446.000	-32.49398
Sum Sq. Dev.	312.9226	3455.063	40.23629	112.1678	45.68966	6965.362	101960.8	4455.814	3.149707
Observations	480	480	480	480	480	480	480	480	480

	IASR	CEOC	CEOT	SGROWTH	RISK	FAGE	SIZE	LEV
Mean	-0.785373	392826.3	3.664557	6.236066	0.063508	37.22152	7.165054	0.180198
Median	-0.805239	13883.00	3.000000	0.078913	0.038790	38.00000	7.052928	0.187064
Maximum	41.56338	9796800.	25.00000	2605.083	0.757748	80.00000	9.680412	3.751623
Minimum	-4.969316	0.000000	2.000000	-1.000000	0.000000	1.000000	5.239405	-11.93888
Std. Dev.	3.167749	1622497.	1.428837	119.9051	0.080637	19.65279	0.853361	0.915774
Skewness	8.602687	4.912492	7.154117	21.55344	4.436296	-0.006126	0.729819	-8.391432
Kurtosis	104.1727	26.22525	105.7541	467.5561	30.25078	1.877504	3.414288	106.7510
Jarque-Bera	208005.9	12559.87	212571.9	4298995.	16221.22	24.88793	45.46805	218157.0
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004	0.000000	0.000000
Sum	-372.2668	1.86E+08	1737.000	2955.895	30.10264	17643.00	3396.236	85.41396
Sum Sq. Dev.	4746.381	1.25E+15	965.6646	6800430.	3.075578	182687.7	344.4507	396.6773
Observations	480	480	480	480	480	480	480	480

4.2 Bivariate Data Analysis (Correlation Analysis)

The correlation analysis among the variables, which is based on equation1 above, 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)

Covariance Analysis: Ordinary
Date: 03/08/24 Time: 16:48
Sample: 2007 2022
Included observations: 480
Balanced sample (listwise missing value deletion)

Covariance Correlation	ABPE	BS	SD	MNC	HHIS	SUB	MASCORE	MARANK	IAROA	IASR
ABPE	0.660174									
	1.000000									
BS	-0.059236	7.289163								
	-0.027003	1.000000								
SD	-0.059507	0.067497	0.084887							
	-0.251372	0.085808	1.000000							
MNC	0.007199	-0.055899	0.000573	0.236641						
	0.018215	-0.042562	0.004040	1.000000						
HHIS	-0.001674	0.020869	0.003983	-0.008764	0.096392					
	-0.006636	0.024897	0.044033	-0.058028	1.000000					
SUB	0.040967	-0.257055	-0.043719	0.240097	-0.128962	14.69486				
	0.013153	-0.024837	-0.039144	0.128754	-0.108357	1.000000				
MASCORE	-0.149259	-0.270207	0.080018	0.070201	0.143458	4.165199	215.1071			

	-0.012525	-0.006824	0.018726	0.009839	0.031505	0.074084	1.000000				
MARANK	-0.108548	0.180473	0.006640	-0.090707	0.039135	0.329350	3.210063	9.400452			
	-0.043573	0.021802	0.007434	-0.060817	0.041113	0.028022	0.071386	1.000000			
IAROA	0.007445	-0.026627	0.000377	-0.004775	0.005673	0.019230	-0.003117	0.022095	0.006645		
	0.112403	-0.120986	0.015858	-0.120427	0.224150	0.061539	-0.002607	0.088405	1.000000		
IASR	0.097785	0.376219	0.037812	-0.027850	0.036165	0.243441	-0.446486	-0.701641	-0.020391	10.01346	
	0.038032	0.044036	0.041012	-0.018092	0.036811	0.020069	-0.009620	-0.072318	-0.079051	1.000000	
CEOC	-17729.74	248398.4	37513.40	16998.08	150993.4	-448279.2	993962.2	2521.614	-13664.68	-6110.380	
	-0.013463	0.056766	0.079440	0.021559	0.300063	-0.072151	0.041814	0.000507	-0.103426	-0.001191	
CEOT	0.077859	0.003899	0.018162	0.042345	0.096424	-0.828498	-0.297478	0.098088	0.020073	0.234927	
	0.067136	0.001012	0.043675	0.060987	0.217591	-0.151420	-0.014210	0.022414	0.172523	0.052013	
SGROWTH	-2.683545	-10.49332	1.788755	2.555805	2.708819	-16.68149	10.86654	-24.82328	-0.231848	1.813473	
	-0.027574	-0.032449	0.051257	0.043864	0.072842	-0.036331	0.006186	-0.067594	-0.023745	0.004785	
RISK	-0.004261	0.013853	0.003932	-0.003112	-0.000220	0.016568	-0.011121	0.000218	-0.000363	0.008164	
	-0.065110	0.063698	0.167558	-0.079406	-0.008811	0.053656	-0.009414	0.000884	-0.055234	0.032029	
FAGE	-0.645317	-3.550740	-0.198444	1.316779	-1.899061	10.07822	5.052501	8.023554	0.268340	-9.094097	
	-0.040456	-0.066991	-0.034694	0.137880	-0.311569	0.133917	0.017547	0.133299	0.167677	-0.146387	
SIZE	-0.087228	0.086430	0.045839	-0.013503	-0.017075	-0.241852	0.438648	0.068134	0.002060	-0.232877	
	-0.125936	0.037553	0.184561	-0.032561	-0.064516	-0.074010	0.035084	0.026069	0.029645	-0.086330	
LEV	0.013760	0.223225	-0.006840	0.010668	0.036362	-0.290244	0.162902	0.146099	-0.001245	-0.006890	
	0.018512	0.090381	-0.025663	0.023973	0.128027	-0.082766	0.012141	0.052089	-0.016689	-0.002380	

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

From Table 3 above, all the variables have weak associations and this attest to the fact that there is no problem of multicollinearity among the variables.

4.2 Bivariate Data Analysis (Variance Inflation Factor)

Variance Inflation Factors (VIFs) is a statistical technique used for the detection of multicollinearity or collinearity among independent variables. A high VIFs reflect the fact there is collinearity among the independent variables meaning th**e** standard errors and the variances of the regression coefficient estimates will increase leading to a very low *t*-statistics (Murray et al, 2012). Table 4 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). All the variables have a VIF less than 10 with a tolerance greater than 0.2. Thus, Table 3 and Table 4 show that our model has no issue with multicollinearity. There is no one single solution to eliminating multicollinearity in a model, and so what to consider is to either: do nothing; drop a redundant variable; transform the multicollinear variables or increase the sample size. Belsley et al. (1980) as cited in Murray et al.(2012) was of the opinion that researchers should take caution in treating VIFs threshold of 5 or 10 or 30 when taking decisions to eliminate or reduce collinearity since other factors like sample size which influence regression coefficients variability should also be considered. Even though our variables meet the standard threshold for the VIF and its corresponding tolerance, our sample size of 480 observations is large enough for there not to be multicollinearity in our model.

Table 4

S/N	Variables	Variance Inflation Factor (VIF)	Tolerance
1	BS	1.098225	0.909091
2	SD	1.112281	0.819672
3	MNC	1.253821	0.769231
4	HHIS	2.237438	0.434783
5	SUB	1.314584	0.714286
6	MASCORE	1.085113	0.909091
7	MA_RANK	1.067630	0.909091
8	IAROA	1.732451	0.588235
9	IASR	1.129331	0.833333
10	CEOC	2.187415	0.454545
11	CEOT	1.441594	0.714286
12	SGROWTH	1.054612	0.909091
13	RISK	1.349375	0.769231
14	FAGE	1.757578	0.555556
15	SIZE	2.154619	0.454545
16	LEV	1.407908	0.714286

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

4.3. Unit Root Test.

Once the EViews workfile has been structured in panel data form, we can go ahead and perform a panel data unit root test as shown in Table 4 below. The unit root test results is based on their probability values.

Table 4

Variables	Levin, Lin & Chu t* test-Statistic	Im, Pesaran and Shin W-stat test-Statistic	Augmented Dickey Fuller test-Statistic	Phillip-Perron test-Statistic	Hadri test-Statistic	Order of Integration or stationarity
ABPE	0.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
BS	0.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
SD	0.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
MNC	1.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
HHIS	Unable to compute URT	Unable to compute URT	Unable to compute URT	Unable to compute URT	0.0000	I(0) stationary
SUB	0.0000	0.0017	0.1497	0.3567	0.0000	I(0) stationary
MASCORE	1.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
MARANK	0.0337	0.0344	0.0455	0.8941	0.0000	I(0) stationary
IAROA	0.5854	0.6974	0.0443	0.0000	0.0000	I(0) stationary
IASR	1.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
CEOC	0.0009	0.8762	0.6812	0.1510	0.0000	I(0) stationary
CEOT	1.0000	0.0050	0.0076	0.0000	0.0000	I(0) stationary
SGROWTH	1.0000	0.0000	0.0000	0.0000	0.0000	I(0) stationary
RISK	0.0000	0.0024	0.0007	0.1397	0.0000	I(0) stationary
FAGE	0.3388	0.8500	0.8778	0.8998	0.0000	I(0) stationary
SIZE	0.0000	0.0000	0.0028	0.0002	0.0000	I(0) stationary
LEV	0.0262	0.0794	0.2050	0.0000	0.0000	I(0) stationary

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

The results of all the test-Statistics for all the variables of interest are reported in Table 4 above are stationery as long as, at least, one of the test-Statistics has a p-value less than 5%. This means that all the variables of interest are I(0), that is, stationary at levels. When variables are not stationary, it means that they can drift apart on the long run and the regression results obtained can be spurious or nonsensical. Thus we can use the ordinary least squares (OLS) method of estimation.

4.4 Regression Models Estimation Results.

Table 5. Dependent Variable: ABPE

Method: Panel EGLS (Period SUR)
Date: 03/08/24 Time: 21:44
Sample (adjusted): 2007 2022
Periods included: 16
Cross-sections included: 30
Total panel (unbalanced) observations: 480
Linear estimation after one-step weighting matrix
Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ABPE(-1)	0.288637	0.034834	8.286027	0.0000
BS	-0.008111	0.008757	-0.926208	0.3549
SD	-0.465459	0.090726	-5.130383	0.0000
MNC	0.046928	0.031886	1.471738	0.1418
HHIS	-0.426954	0.048709	-8.765370	0.0000
SUB	-0.001463	0.003447	-0.424436	0.6715
MASCORE	0.000966	0.001597	0.604948	0.5455
MA_RANK	-0.006526	0.007676	-0.850182	0.3957
IAROA	1.499028	0.226201	6.626985	0.0000
IASR	0.043834	0.009971	4.396122	0.0000
CEOC	5.60E-08	8.55E-09	6.553760	0.0000
CEOT	0.050254	0.012326	4.077145	0.0001
SGROWTH	0.080233	0.045940	1.746477	0.0814
RISK	-0.084474	0.222578	-0.379524	0.7045
FAGE	-0.003067	0.000720	-4.257384	0.0000
SIZE	-0.125269	0.019923	-6.287625	0.0000
LEV	0.067080	0.034923	1.920795	0.0554
C	1.574205	0.237269	6.634675	0.0000

Weighted Statistics

R-squared	0.379518	Mean dependent var	0.166332
Adjusted R-squared	0.354815	S.D. dependent var	1.241335
S.E. of regression	1.000081	Sum squared resid	427.0689
F-statistic	15.36324	Durbin-Watson stat	1.931919
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.206119	Mean dependent var	0.018102
Sum squared resid	226.5552	Durbin-Watson stat	1.887345

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

4.5 Discussion of the Regression Estimation Results and Hypotheses Testing.

Table 5 above shows the regression estimation results of the relationship between independent variables (BS, SD, MNC, HHIS, SUB, MASCORE, MARANK, IAROA, IASR, CEOC and CEOT) as well as some control variables (SGROWTH, RISK, FAGE, SIZE and LEV) and financial performance (ROA) of the 30 sampled firms. The coefficient (0.288637) of ABPE(-1) shows that it is positively significant with a t-Statistic (8.286027) and a p-value(0.0000) at the 1% levels of significance. This result is in line with 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. This means that the current year performance can be directly affected by previous period performance in the light of new information we were not aware of. The Adj R^2 of 0.354815 indicates that about 35% of systematic variations in performance extremism is accounted for by BS, SD, MNC, HHIS, SUB, MASCORE, MARANK, IAROA, IASR, CEOC, CEOT, SGROWTH, RISK, FAGE, SIZE and LEV while the remaining 65% can be explained by other factors not captured by the model. The F-statistic (15.36324) and a Prob(F-stat.) of 0.000000 confirm that there is a joint statistical significant of a linear relationship between the variables (dependent and independent). With a Durbin-Watson stat of 1.931919, the model is assumed to be freed from serial correlation.

Looking at the independent variables (BS, SD, MNC, HHIS, SUB, MASCORE, MARANK, IAROA, IASR, CEOC and CEOT) reveal that six of the variables (SD, HHIS, IAROA, IASR, CEOC and CEOT) are statistically significant at the 5% levels while five (BS, MNC, SUB, MASCORE and MARANK) are statistically not significant.

Specifically, SD which represents strategic deviance relationship with ABPE is negatively significant with a coefficient of -0.465459, a t-Statistic of -5.130383 and a p-value of 0.0000. This means that as SD increases, ABPE decreases. This means that the more the firms try to be strategically different from the standard industry average, the less profitable the firms' performance. 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 SD and ABPE.

HHIS which represents business complexity relationship with ABPE is negatively significant with a coefficient of -0.426954, a t-Statistic of -8.765370 and a p-value of 0.0000. This means that as HHIS increases, ABPE decreases. This means that the more competitive the industry is, the less profitable the firms' performance. 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 HHIS and ABPE.

IAROA which represents managerial ability relationship with ABPE is positively significant with a coefficient of 1.499028, a t-Statistic of 6.626985 and a p-value of 0.0000. This means that as IAROA increases, ABPE increases. This means that the greater the ability of managers, the more profitable the firms' performance. The sign or direction as well as 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 HHIS and ABPE.

The other variables representing managerial ability- IASR (Coefficient = 0.043834, t-statistic = 4.396122, p-value = 0.0000;; CEOC(Coefficient = 5.60E-08, t-statistic = 6.553760, p-value = 0.0000 as well as CEOT(Coefficient = 0.050254, t-statistic = 4.077145, p-value = 0.0001) are all positively significant with ABPE and should be interpreted like that of IAROA.

4.6 Residual Diagnostic Tests of No Cross Sectional Dependence

An increasing number of literatures on panel-data conclude that panel-data models are likely to substantially exhibit cross-sectional dependence in the errors. This may be due to the presence of common shocks and some other unobserved components that may eventually become part of the error term. According to De Hoyos and Sarafidis (2006), the past few decades have witnessed an ever-growing economic and financial integration among countries and this signifies strong interdependencies among cross-sectional units. Thus, there is the tendency for individuals to respond in a similar manner to common "shocks", or some common unobserved factors due to neighborhood effects, herd behavior, social norms and genuinely interdependent preferences (De Hoyos & Sarafidis, 2006). Rodríguez-Caballero (2016) also noted that if cross-sectional dependence exists in a panel data model, it can complicate statistical inference and any estimators that do not take such into account could be inconsistent even if the number of cross section dimension N is large with a finite time dimension T . The above necessitate us to test for cross-sectional dependence as such testing is very important in fitting panel-data models. The results of the cross sectional dependence tests in Table 6 below show that at least one of the test statistics- Breusch-Pagan LM and Pesaran CD-accept the null hypotheses of no cross sectional dependence in the residuals since the results of Pesaran CD test-Statistic (1.112199) has a P-value (0.2661) which is greater than 5% .We, therefore, conclude that there is no cross-dependence in the residuals

Table 6. Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in weighted residuals
Equation: Untitled
Periods included: 16
Cross-sections included: 30
Total panel (unbalanced) observations: 480

Note: non-zero cross-section means detected in data
Test employs centered correlations computed from pairwise samples

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	291.7463	435	1.0000
Pesaran scaled LM	-4.856757		0.0000
Pesaran CD	1.112190		0.2661

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

4.7 Additional Regression Analysis for Robustness Checks.

To test the robustness of our results, we exclude the firm-specific control variables (SGROWTH, RISK, FAGE, SIZE and LEV) as stated in equation 2.

Table 7. Dependent Variable: ABPE

Method: Panel EGLS (Period SUR)
Date: 03/08/24 Time: 21:46
Sample (adjusted): 2006 2020
Periods included: 15
Cross-sections included: 30
Total panel (unbalanced) observations: 449
Linear estimation after one-step weighting matrix
Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ABPE(-1)	0.289517	0.035370	8.185301	0.0000
BS	-0.012184	0.008908	-1.367753	0.1721
SD	-0.563008	0.085523	-6.583144	0.0000
MNC	0.049577	0.027513	1.801941	0.0722
HHIS	-0.176326	0.032510	-5.423774	0.0000
SUB	-0.004781	0.002953	-1.619184	0.1061
MASCORE	0.000534	0.001394	0.382925	0.7020
MA_RANK	-0.011889	0.007694	-1.545091	0.1230
IAROA	1.020323	0.194486	5.246256	0.0000
IASR	0.054125	0.008403	6.441531	0.0000
CEOC	2.35E-08	5.67E-09	4.147187	0.0000
CEOT	0.035814	0.009363	3.824836	0.0001
C	0.685396	0.177996	3.850632	0.0001

Weighted Statistics			
R-squared	0.334486	Mean dependent var	0.236295
Adjusted R-squared	0.316169	S.D. dependent var	1.196788
S.E. of regression	0.997654	Sum squared resid	433.9570
F-statistic	18.26106	Durbin-Watson stat	1.940397
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.182643	Mean dependent var	0.015154
Sum squared resid	234.2143	Durbin-Watson stat	1.862341

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

The result from Table 7 above without any control variable above is exactly the same as that of Table 5 with control variables. Again, while six of the variables (SD, HHIS, IAROA, IASR, CEOC and CEOT) are statistically significant at the 5% levels; the other five (BS, MNC, SUB, MASCORE and MARANK) are statistically not significant.

Table 7

Comparative Analysis of the two Regression Models Estimation Results.						
S/N	VARIABLES	T-Statistic	P-Values of the Dynamic ABPE Model with control variables	VARIABLES	T-Statistic	P-Values of the Dynamic ABPE Model without control variables
1	ABPE(-1)	8.286027	0.0000	ABPE(-1)	8.185301	0.0000
2	BS	-0.92621	0.3549	BS	-1.36775	0.1721
3	SD	-5.13038	0.0000	SD	-6.58314	0.0000
4	MNC	1.471738	0.1418	MNC	1.801941	0.0722
5	HHIS	-8.76537	0.0000	HHIS	-5.42377	0.0000
6	SUB	-0.42444	0.6715	SUB	-1.61918	0.1061
7	MASCORE	0.604948	0.5455	MASCORE	0.382925	0.7020
8	MA_RANK	-0.85018	0.3957	MA_RANK	-1.54509	0.1230
9	IAROA	6.626985	0.0000	IAROA	5.246256	0.0000
10	IASR	4.396122	0.0000	IASR	6.441531	0.0000
11	CEOC	6.55376	0.0000	CEOC	4.147187	0.0000
12	CEOT	4.077145	0.0001	CEOT	3.824836	0.0001
13	SGROWTH	1.746477	0.0814	C	3.850632	0.0001
14	RISK	-0.37952	0.7045			
15	FAGE	-4.25738	0.0000			

16	SIZE	-6.28763	0.0000			
17	LEV	1.920795	0.0554			
18	C	6.634675	0.0000			

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

A comparative analysis of the two results shows that SD and HHIS are both negatively significant in the two models. IAROA, IASR, CEOC and CEOT are positively significant in both models. Also, BS, MNC, SUB, MASCORE and MARANK) are statistically not significant in both models. Again, ABPE (-1) as well as the Durbin-Watson stat exhibit the same outcome in both models. This shows that the results are robust in explaining the relationship between product market competition and performance extremism in Nigeria.

Conclusion and Recommendations.

This study investigates the relationship between business strategy, strategic deviance, business complexity and managerial ability on accounting-based performance extremism product market competition and performance extremism of listed non-financial firms in Nigeria. Secondarily sourced panel data over the period from 2007 to 2022 of 30 of those firms on the floor of the Nigerian Exchange Group (NXG) was used. The estimated generalized least squares (EGLS) results reveal that two of the variables (SD and HHIS) are negatively significant with performance extremism; four variables (IAROA, IASR, CEOC and CEOT) are positively and statistically significant with it while BS, MNC, SUB, MASCORE and MARANK) are statistically not significant.

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

- Management should revisit their over strategies since research has shown that the choice of corporate strategy can have a strong impact corporate performance. This is due to the fact that business strategy has an insignificant effect on performance while strategic deviance has a negative effect.
- Management should continue to improve on its efforts and not to relent at all since four out of the six managerial ability measures are positively significant with performance even though the two most recent ones(MASCORE and MARANK) are insignificant.

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