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Stock Market Indicators and Nigeria's Economic Growth: Evidence from Error Correction Model

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Abstract: **The study examined the impact of stock market indicators on Nigeria's economic growth between 1991 and 2021. It employed Johansen co-integration to check the long-run relationship among the secondary data: Real Gross Domestic Product (RGDP) as the dependent variable; Market Capitalization (MCAP), All Share Index (ASI), and Gross Capital Formation (GCF) represented the independent variables which were sourced from CBN Statistical Bulletin and World Bank Development Indicators. Pre-estimation test showed that all the variables were integrated of order one, I (1) through the Augmented Dickey-Fuller unit root test. The co-integration test revealed the existence of a long-run relationship among the variables. The error Correction Model (ECM) technique was adopted to analyze the short-run dynamics in the dataset. The ECM results showed that market capitalization and all share indexes had a positive impact on the RGDP in the short run. However, the gross capital formation was found to be negative but significant at a 5 percent significance level. Moreover, the error correction term showed that equilibrium, in the long run, is reconciled at a speed of approximately 51 percent aftershock. Further, the diagnostic test showed that the residuals are homoscedastic and efficiently distributed. Results are therefore appropriate for policy analysis. This research offers valuable insights but the findings have some constraints of limitations, particularly regarding available relevant materials and papers. This study is original for it has filled some gaps by examining the impact of stock market indicators on Nigeria's economy between 1991 and 2021. Given limited existing research, this study contributes to knowledge by exploring the impacts stock market indicators have on Nigeria's economic growth within the period under study. The study recommended that there is a need for the Federal Government of Nigeria through the Nigeria Stock Exchange (NSE) to encourage private sector investment in the capital market. This can be done through educating and enlightening the public using experts who are competent in stock market dealings.**

Keywords: **Stock market, Capital formation, Market capitalization, Share Index and Economic Growth.**

1. INTRODUCTION

The securities exchange provides the instrument for gathering and apportioning medium and long-haul monetary assets between financial units to work with ideal asset appropriation, abundance creation, and financial development. The securities exchange empowers monetary intermediation as it guarantees customary exchanging recorded monetary protections and that cited firms have satisfactory admittance to capital. In this manner, a utilitarian securities exchange upholds the monetary framework by giving elective money to organizations and speculation outlets to venture (Container and Mishra, 2018). The two business sectors that decide generally the heading and level of financial development inside an economy, aside from different factors like political, social, and ecological variables, are the cash and capital business sectors (Ahmed, 2008). The monetary framework in an economy assumes a significant part in its development and improvement of an economy (Igwe, Magaji & Darma, 2021). It is utilized to quantify the refinement of a country's speculation 'environment', particularly in drawing in unfamiliar financial backers (Chinedu, Magaji & Musa, 2021).

The stock market offers a channel through which the savings may be converted into medium or long-term investments in the deficit's units. This market performs essential roles, which promote economic growth and prospects of the economy (Anigbogu & Nduka, 2014). Recent studies, over the years, suggest that stock market liquidity has been a means of growth and development in emerging economies (Anderu, 2020, Thaddeus *et, al*., 2020). As a result, without a liquid stock market, many profitable long-term investments would not be made since savers would be hesitant to tie up their capital for extended periods. A liquid market, on the other hand, makes it simple for investors to sell their shares, enabling businesses to raise equity capital on advantageous terms (Adenuga, 2010). Numerous pieces of empirical evidence, yet firmly support the belief that better liquidity in the stock market enhances the growth of an economy. Also, some research recommends that substantial, liquid, and globally interconnected stock markets stimulate economic growth. Whereas other theories recommend that sophisticated stock markets are quite insignificant for aggregate economic activity (Adenuga, 2010).

The stock market enables the government and industries to finance new and existing projects, expanding, and modernizing industrial commercial concerns. (Magaji, Abubakar & Tahir, 2015) identified the capital market as the most credible source of long-term funds for any economy and a leading economic indicator in developed economies. The stock market makes the interaction of both savers and investors possible in a country (in an open market); all the aggregate savings are channeled into the most desirable investment for economic growth and development (Magaji & Yahaya, 2012). In 1960, the Nigerian Capital Market was laid out as the Lagos Stock Trade and later different to the Nigerian Stock Trade in December 1977. It started activities in 1961 with 19 protections recorded for exchanging (SEC, 2010). Branches were opened in key cities of the country. The NSE was developing without fail to address its clients' issues and accomplish the most significant level of seriousness. The Trade works fair, deliberate, and straightforward business sectors that unite the best of African undertakings and the neighborhood and worldwide financial backer networks. Subsequently, the Nigerian Stock Trade is ready to advocate the speed increase of Africa's financial turn of events and to turn into 'the Doorway to African Business sectors'. The center point of the Nigeria Capital market is the Nigeria Stock Exchange. It provides a framework for mobilizing private and public savings and the availability of such funds for productive purposes. The NSE supports various competitive alternatives in allocating the capital resources of the country (Adesanya, Adediji, & Okenna, 2020). The stock exchange may also be a tool that can calculate and detect the signs of an imminent economic boom or downturn well before the anticipated prosperity or decline happens whether the economy is either at the level of efficiency in a semi-strong or strong form.

The stock market performs essential roles, which promote economic growth and prospects of the economy (Anigbogu & Nduka, 2014). Recent studies, over the years, suggest that stock market liquidity has been a means of growth and development in emerging economies. Numerous pieces of empirical evidence, yet firmly support the belief that better liquidity in the stock market enhances the growth of an economy. Further, some study recommends that substantial, liquid, and globally interconnected stock markets stimulate economic growth. Whereas some contented that sophisticated stock market indicators are quite insignificant for aggregate economic activity (Adenuga, 2010). This has generated the need to properly examine the relationship between stock market indicators and Nigeria's economic growth between 1991-2021. This study intends to answer the question that what is the impact of stock market indicators on Nigerian economic growth from 1991 to 2021.

1.1 Research Hypotheses

The hypotheses supporting the theoretical posture of this research study are expressed in their null form:

H_{01}: market capitalization has no significant impact on Nigeria's economic growth.

H_{02}: all share index has no significant impact on Nigeria's economic growth.

The broad objective of the study is to examine the impact of stock market indicators on Nigeria's economy, and the study seeks to address the specific objectives:

i. Ascertain the impact of Market Capitalization (MCAP) on Nigeria's economic growth.

ii. Establish the All-Share Index (ASI) impact on Nigeria's economic growth.

iii. What is the Impact of Gross Capital Formation on Economic Growth in Nigeria?

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2. REVIEW OF LITERATURE

2.1 Conceptual Review

Three important concepts need to be reviewed in this study. The concepts are; the stock market, market capitalization, all share index, and economic growth.

2.1.1 Stock Market: The stock market is a market that deals in long-term loans (Jhingan, 2011). It provides businesses with fixed and working capital and finances medium- and long-term borrowings from the local, state, and federal governments. Subsequently, the stock market includes mechanisms and institutions through which medium and long-term funds are shared and made available to corporate firms and governments. Musa, Magaji & Adewale (2023) stated that the stock market has been recognized as an establishment that enhances the socioeconomic progress of emerging economies.

2.1.2 Market Capitalization: Market capitalization is the sum of a company's value based on its current share price and all of its outstanding shares. It is computed by multiplying the number of outstanding shares of the company by the share price at the time of calculation. The economy's expansion and development are significantly influenced by the market (Arumona, Lambe, & Dauda, 2020) and the role of this impact is growing.

2.1.3 All Share Index: All share index accounts for the market movement of all listed shares and equities in the stock market. The statistical data also measure the changes in the value of securities. This indicator is obtained from the price of market components, usually expressed in percentage change. This index is crucial for understanding the performance of a financial market (Maxwell, Happiness, Alice, & Chinedu, 2018).

2.1.4 Economic Growth: Economic growth is typically defined as a rise in the market value of the goods and services generated by an economy over a given period, adjusted for inflation. According to Dynan & Sheiner (2018), it is measured as the rate of growth in real GDP as a percentage, typically expressed in terms of per capita. Real terms, or terms adjusted for inflation, are typically used to measure growth. Economic growth is a vital indicator of a nation's economic performance since it refers to the continued growth in the volume of output that a nation produces over time. The major determinant of economic growth in Nigeria is oil and gas. Current research shows that the Nigerian economy is ranked as the fifteenth-largest oil producer and first-largest gas producer in Africa (Shuaibu & El-Yaqub, 2022).

2.2 THEORETICAL REVIEW

Capital Asset Pricing Model (CAPM)

This theory was propounded by Sharpe (1964) and Linter (1965). This theory explains descriptive decisions under the expected return and risk of financial structures. The model is built on the Markowitz portfolio theory, it extended the assumptions which include borrowing and lending at a risk-free rate, and complete agreement of joint distribution of asset returns. CAPM is tested on three different implications as regards the relationship between the market and expected return. First, there is a linearity related to a parameter (beta) of the expected returns on every asset. Second, the non-negativity of the parameter. Lastly, Linter and Sharpe asserted that there is a risk-free interest rate as the market expected return. Accordingly, these assumptions are applied to time series or cross-sectional regressions.

2.3 Empirical Review

The impact of stock market indicators on any economy has been a crucial discussion among researchers. A significant number of empirical evidence has shown that the role of stock market indicators in the financial and economic activities in Nigeria and beyond cannot be overemphasized.

Thaddeus et al. (2022) researched the effect of securities exchange productivity on financial development in Sub-Saharan Africa somewhere in the range of 1990 and 2020. The review utilized board information from the time series information acquired from WDI and the philosophy utilized was Granger causality, Johansen co-reconciliation, and Autoregressive Disseminated Slack Model (ARDL). Their examination showed an association between securities exchange execution and financial development in Sub-Saharan African countries. The Granger causality test between securities exchange advancement and financial development delivered a questionable outcome, demonstrating that the creators can't decide if

securities exchange improvement causes monetary development or whether financial development causes securities exchange improvement.

Andreu (2020) researched the connection between capital market improvement and the degree of financial results in Nigeria (1980-2017). The creators found that securities exchange improvement advances homegrown confidential Speculation streams, in this manner recommending the upgrade of the economy's creation limit as well as the advancement of the development of public results. The review utilized Gross domestic product, all-order record, Gross Capital Development (GCF), Financing costs, and Market capitalization. In any case, the outcomes show that stock improvement has not had the option to energize the progression of unfamiliar confidential interest in Nigeria. In like manner, the gross capital development was overlooked in the model determination. The paper suggested that the public authority ought to extend the market mechanically to additionally further develop exchanges and dealings, which could improve its internationalization and seriousness.

Osakwe, Ogbonna, and Obi-Nwosu (2020) inspected the causal connection between securities exchange improvement and the financial development of South Africa and Nigeria. The review involved yearly time series information for the period 2000 - 2018 and the Conventional Least Squares (OLS) technique was utilized. The securities exchange execution was inconsequential for Nigeria however certain for South Africa. Observational outcomes showed that the causal connection between securities exchange execution and financial movement is responsible for the parts utilized for estimating securities exchange advancement. Besides, the paper prescribed a need to upgrade the market size in Nigeria and South Africa.

Ubesie, Nwanekpe, and Ejilibe (2020) concentrated on the effect of the Capital Market on Financial Development in Nigeria. The review utilized the conventional least square technique (OLS) in breaking down the time series factors acquired for the review. The aftereffect of the discoveries shows that every one of the factors of revenue was critical in making sense of the way of the capital market on the development of Nigeria's Economy except the Workforce. All the more in this way, the outcome shows that the model utilized for the examination is satisfactory and best fits the factors acquired. Moreover, fundamental suggestions were made to empower the public authority to think of a positive strategy that will make for development in the way of life.

Ugbogbo and Aisien (2019) additionally inspected the connection between the Nigerian capital market improvement and financial development during the period 1981 to 2016 utilizing co-reconciliation and ECM strategies. The outcome showed a positive and critical connection between capital market improvement and financial development and recommended the quest for strategies pitched toward the quick improvement of NSE In like manner, Popoola, Ejemeyovwi, Alege, Adu and Onabote (2017) inspected the connection between the securities exchange and monetary development in Nigeria. The review utilized a few econometrics instruments like Increased Dickey-Fuller (ADF), Johansen co-reconciliation test, Customary Least Squares (OLS), and Pairwise Granger Causality (PGC) procedures for investigation. The Conventional Least Squares result uncovers a negative however critical connection between the All-Offer Record and Gross Domestic Product. Be that as it may, a long-run relationship exists between the total national output and securities exchange pointers. The discoveries from the PGC showed Gross domestic product significantly affects the presentation of the securities exchange, however generally on account of securities exchange execution. The proposal recommended a compelling arrangement to support the Nigerian Stock Trade's presentation to assist the country.

A long-run connection between capital market execution and the Gross domestic product development in Nigeria utilizing time series information showed that however, the Nigerian capital market can prompt development, there has not been any significant commitment to the financial development of Nigeria (Okpara, 2010). The paper utilized yearly time series information from 1970 to 2007 and the information was recovered from CBN Measurable Announcement and World Bank Improvement Pointers. In opposition to crafted by Popoola et al. (2017), market capitalization and all offer record grangers cause Gross domestic product development. The determination prescribed motivating forces through a public mission to illuminate individuals about the meaning of the Nigerian Stock Trades (NSE) on the Nigerian economy.

A long-run association between capital market execution and the GDP improvement in Nigeria using time series data showed that anyway the Nigerian capital market might conceivably provoke improvement, there has not been any critical obligation to the monetary advancement of Nigeria (Okpara, 2010). The paper used yearly time series data from 1970 to 2007 and the data were recuperated from CBN Quantifiable Declaration and World Bank Improvement Pointers. Contrary

to those created by Popoola et al. (2017), market capitalization and all proposition record grangers cause Total national output advancement. The assurance recommended persuading powers through a public mission to enlighten people about the significance of the Nigerian Stock Exchanges (NSE) on the Nigerian economy.

Salihi, Ibrahim, Muhammad, and Ahmad (2015) analyzed the impact of securities exchange advancement on financial development in Nigeria utilizing different relationship and relapse examinations on yearly information, for example, the worth of stock exchanged, market size, capitalization, and Gross domestic product somewhere in the range of 1990 and 2010. The outcome showed that market capitalization and worth of stock exchanged precisely an adverse impact on financial development while turnover impacts monetary development.

Yadirichukwu and Chigbu (2014) inspected the effect of the securities exchange on the development and advancement of Nigeria. The review investigated broad optional information somewhere in the range of 1985 and 2012 and utilized a multivariate and co-reconciliation mistake rectification model (ECM). The outcome shows that two of the factors of interest are positive while two display a negative and measurably critical relationship with the Nigerian economy. This could invigorate discourse on the ramifications of strategy reproduction. A suggestion is that significant administrative organizations ought to zero in on upgrading the effectiveness and straightforwardness of the market to work on financial backers' certainty.

Oskooe (2010) assessed the relationship between stock market performance and economic growth in Iran by using causality tests within a Vector Error Correction Model (VECM) structure. Quarterly time series data was used from the third quarter of 1997 to the third quarter of 2008. To prevent spurious regression, unit root tests were done for all-time series data in their levels and their first differences. Johansen's co-integration testing was used to examine whether the variables are co-integrated, considering the maximum Eigenvalues and trace statistics tests. Ultimately, the Granger causality test was used to identify the causality direction between the estimated model variables. It was observed that the level of real economic activity was the key feature in the movement of stock prices in the long run. Furthermore, the stock market plays a role as a leading business cycle indicator of future economic growth in Iran in the short run. The results from this study are realistic because, when the stock market performs well, the impact is transferred to businesses, which in turn impacts the overall economic growth.

This study seeks to examine the impact of stock market indicators on Nigeria's economy. A small number of the literature examined did not take into account the variation in time for economic activities to respond to the stock market. Despite the overwhelming theoretical evidence of the relationship between stock market indicators and economic growth in Nigeria at the heart of the discussions, empirical studies have been divergent. For example, Popoola, Ejemeyovwi, Alege & Adu (2017) that the All-Share Index and GDP possess a negative relationship, while Anderu (2020) Studies posit a positive relationship. This indicates that there may be distortions in the economy given the variation in the period of study. Also, some of the related literature examining the impact of the stock market on the Nigerian economy has not efficiently depicted the country's recent development. Accordingly, this study seeks to give up-to-date or current recommendations and suggestions regarding the relationship between the stock market capitalization, all share index, and Nigeria's economy. Our data showed that in 2020, the market capitalization (MCAP) reported a 13.09%. However, there was a decline in that year as COVID-19 truncated market activities. The undesirable sign denotes the coronavirus pandemic which led to a global shutdown of all economies in which Nigeria was not exclusive. In addition, besides the market capitalization's output of the stock market, other factors influence economic growth namely: All-Share market index, government policies, saving rates, etc. some of which were not addressed in most of the studies reviewed. Further, we expand our scope of study to 31 years for a large degree of freedom. Finally, this seeks to employ more recent data and consider other determining factors not discussed to examine the impact of the stock market indicators on the Nigerian economy from 1991 to 2021.

3. RESEARCH METHODS

This study employed an Ex post facto research design to examine the impact of stock market indicators on the Nigerian economy. This type of research design captures the effect of the independent or explanatory variables on the dependent variable. To avoid seasonal bias, annual secondary time series data is used in this study. This study also considers pre and post-estimators in a bid to draw a valid conclusion on the relationship between the explanatory and explained variables.

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3.1 MODEL SPECIFICATION

This study adopted the model of Magaji, Musa & Adewale (2023) to examine the Impact of Market Capitalization on Gross Fixed Capital Formation in Nigeria: 1985-2020.

$GFCF_t$ = (MCAP, NOD, CAT, ASI, LTE) - - - - - 3.1

GFCFt=a0t+a1tMCAPt+a2tNODt+a3tVATt +ASIa4t+TLEa5t+Ut - - 3.2

Where:

GFCF = Gross fixed capital formation

a_0 = Regression Constant

a_1–a_5 = Co-efficient of independent variables

MCAP = Market Capitalization

ASI = All Share Index

NOD = Number of Deal

VOL = Volume of Transactions

CAT = Change in Value of Transaction

TLE = Total Listed Equities and Government Stock

U_t = Stochastic Error term (Disturbance term)

T = Time series

In this study, changes were made by dropping all the variables except Market Capitalization and All Share Indexes and we added Gross Capital Formation. Hence, the model of this study is expressed below:

RGDP = f(MCAP, ASI, GCF) - - - - - 3.3

The econometric model is specified as follows:

$$RGDP = \beta_0 + \beta_1 MCAP + \beta_2 ASI + \beta_3 GCF + \mu \quad - \quad - \quad - \quad - \quad 3.4$$

Adopting a log-linear specification, taking the natural logarithm of RGDP and ASI as they are in Billions and Thousands, respectively, we have:

$$InRGDP = \beta_0 + \beta_1 MCAP + \beta_2 InASI + \beta_3 GCF + \mu \quad - \quad - \quad - \quad 3.5$$

Where:

RGDP = Real Gross Domestic Product

MCAP = Market Capitalization

ASI = All Share Index

GCF = Gross Capital Formation

β_0 = Constant term

β_1-β_3 = Slope parameters

μ = Error term

A Priori expectations: MCAP; ASI; GCF > 0.

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4. RESULTS

4.1 Descriptive Statistics

Table 4.1

	RGDP	MCAP	ASI	GCF
Mean	49584.47	11.96519	29458.96	27.50581
Median	30375.18	11.03994	22876.72	26.16650
Maximum	176075.5	30.80067	295471.7	48.40018
Minimum	590.0597	2.488777	671.6167	14.16873
Std. Dev.	52707.36	6.221929	51895.13	10.62355
Skewness	0.917819	1.126334	4.527229	0.302242
Kurtosis	2.633793	4.470084	23.80730	1.834497
Jarque-Bera	4.525584	9.346058	665.1140	2.226574
Probability	0.104060	0.009344	0.000000	0.328477
Sum	1537119.	370.9210	913227.9	852.6800
Sum Sq. Dev.	8.33E+10	1161.372	8.08E+10	3385.795
Observations	31	31	31	31

Source: Eviews, 2024.

Table 4.1 presents the individual sample descriptive statistics for the data extracted. The data include Real Gross Domestic Product (RGDP), Market Capitalization (MCAP), Share Index (ASI), and Gross Capital Formation (GCF). It can be observed that the values of RGDP and GCF series are normally distributed while MCAP and ASI with a probability value of Jarque-Bera less than 0.05. Also, RGDP and GCF exhibit a platykurtic distribution with a Kurtosis value of less than 3, while Market Capitalization and All Share Index exhibit a leptokurtic distribution. The standard deviation of Real GDP from the mean is larger than ASI. This implies that the spread of Real GDP reflects the consistently increasing existence of output in Nigeria. This implies that the variation in all share indexes is quite higher than market capitalization and gross capital formation, creating an improving productivity rate as mirrored in the regular variation in the growth of the economy.

4.2 Result and Discussion

Unit Root Test

Table 4.2 Augmented Dickey-Fuller Test

Variable	ADF-Value	t-Statistic (5%)	Prob**	Order of Integration	Remarks
InRGDP	-4.1030	-3.5742	0.0160	I(1)	Stationary
MCAP	-5.6088	-3.5742	0.0004	I(1)	Stationary
InASI	-5.1978	-3.5742	0.0015	I(1)	Stationary
GCF	-4.1066	-3.5742	0.0159	I(1)	stationary

Source: E-views, 2024.

The ADF unit root test result from Table 4.2 established that the data series of all the variables of interest were stationary at their first difference i.e., integrated of order one, I(1). After establishing the stationarity level of the variables, we proceed to estimate the Johansen System co-integration Test for the long-run relationship among the variables.

Co-integration Test

Table 4.3 Johansen Co-integration Test

Unrestricted Co-integration Rank Test (Trace) Series: IN(RGDP) MCAP IN(ASI) GCF				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.685425	66.09008	55.24578	0.0042
At most 1	0.505570	33.70718	35.01090	0.0686
At most 2	0.370353	13.98536	18.39771	0.1859
At most 3	0.036209	1.032661	3.841466	0.3095
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.685425	32.38290	30.81507	0.0319
At most 1	0.505570	19.72182	24.25202	0.1777
At most 2	0.370353	12.95270	17.14769	0.1842
At most 3	0.036209	1.032661	3.841466	0.3095
Max-eigenvalue test indicates 1 Co-integration eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Source: Eviews, 2024.

The outcome of the Johansen co-integration techniques exposed that there exists one co-integration equation at a 5% level of significance from the trace statistics and one co-integration equation based on the Max-eigen test result. This suggests a long-run relationship among the variables.

OLS Regression Output

Long Run Result

Table 4.4 Long Run Regression

Variable	Coefficient	Std. Error	t-Statistic	Probability**
Cons	3.9131	1.8252	2.1439	0.0477
MCAP	0.0539	0.0217	2.4839	0.0270
InASI	0.4986	0.3719	1.3406	0.1988
GCF	-0.0292	0.0146	-2.0002	0.0541

Source: Eviews, 2024.

Error Correction Model (ECM)

Table 4.5: ECM Regression

Dependent Variable: InRGDP

Variable	Coefficient	Std. Error	t-Statistic	Probability**
Cons.	0.0763	0.0077	9.8613	0.0000
D(MCAP)	0.0605	0.0167	3.6203	0.0036
D(InASI)	0.0843	0.0241	0.3496	0.2971
D(GCF)	-0.0770	0.0265	-2.9075	0.0077

ECT(-1)	-0.5112	0.2262	-2.2595	0.0332
R-squared	0.6204			
Adj. R-squared	0.5235			
F-statistics	9.3526			
Prob(F-statistic)	0.0006			
Durbin-Watson	.2538			

Source: Eviews, 2024.

The Long-run and error correction model (ECM) results presented in Table 4.4 and Table 4.5 respectively, the probability value of Prob < 0.05, implies that the variable of interest is statistically significant at a 5% level of significance; otherwise, it is not significant at that level.

The Long run and ECM estimated results revealed a positive relationship between the dependent variable Real Gross Domestic Product (RGDP) and the independent variables to be precise, Market capitalization (MCAP) and All-share index.

Thus, in the ECM result, we accept the alternative hypothesis and reject the null hypothesis that Market capitalization (MCAP) has a significant impact on the Real Gross Domestic Product (RGDP). A unit change in MCAP will cause the Real GDP to increase by approximately 0.06 units.

Nevertheless, we reject the alternative hypothesis and accept the null hypothesis that the All-share index (ASI) has no insignificant impact on Real GDP. A unit increase in ASI will lead to a 0.08 unit increase in Real GDP. The probability value is 0.2971 which confirms the insignificance impact of all share indexes.

Both long-run and short-run output results show a similar output. The result displays that a unit change in the Gross capital formation (GCF) will cause the Real GDP to decrease by approximately 0.51 and 0.03 units, respectively. However, the result shows the significant impact of GCF on Real GDP with a probability value of less than 0.05 (See Table 4.5)

The Durbin-Watson test is 2.25 signifying the absence of autocorrelation, suggesting that the residual values of the model are not correlated. The result from Table 4.4 confirmed that the F-test is significant at 5 percent given the value of 9.35, and the prob (f-stat.) value is 0.00 which led to the acceptance of the alternative hypothesis that all the variables are jointly significant in explaining the variations in manufacturing sector output and conclude that they are concurrently significant.

Furthermore, the coefficient of a period lag of Error Correction Term (ECT), was negative and significant at 5 percent with very moderate feedback of 0.5112. Thus, it recommends the endogenic variables are moving toward a state of equilibrium at a speed of about 51.12%. While the R-squared which measures the coefficient of determination showed a 62.04% good fit of the model as well as a 52.38% adjusted coefficient of determination. Therefore, we submit that there is a correction of disequilibrium in the long-run effect of the independent variables on the dependent variable.

Diagnostic Test

Multicollinearity Test

Table 4.6 Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
D(MCAP)	2.79E-06	1.815841	1.813098
D(INASI)	0.000582	1.198947	1.162503
D(GCF)	7.03E-06	1.081613	1.067269
ECT(-1)	0.051193	1.636006	1.635451
C	5.99E-05	1.039445	NA

Source: Eviews, 2024.

Heteroscedasticity Test

Table 4.7 Breusch-Pagan-Godfrey

F-statistic	2.863649	Prob. F(4,24)	0.0451
Obs*R-squared	9.369258	Prob. Chi-Square(4)	0.0525
Scaled explained SS	9.882943	Prob. Chi-Square(4)	0.0424

Source: Eviews, 2024.

Tables 4.6 and 4.7 present the analytical test results of the ECM regression to inspect the consistency of the coefficients. The multicollinearity test by variance inflation factors (VIF) confirmed that our explanatory variables are not dependent on each other thus, free from the problem of multicollinearity as the value of the Centered VIF is less than 10. However, the model failed the heteroscedasticity test.

5. CONCLUSION AND RECOMMENDATIONS

This study examined the impact of Stock Market Indicators on Nigeria's economy between 1991 and 2021. The study adopted various processes of the popular Johansen co-integration, after testing for the variable's stationarity level which resulted in have integration order of one, I(1). The error correction model (ECM) reveals evidence of establishing a correction to disequilibrium among the variables. All the independent variables are significant except the All Share Index (ASI). In summary, the specific objectives were to estimate the long-run elasticities as well as the error-correction mechanism of market capitalization rate, all share index, and gross capital formation on economic growth. The hypothesis that stock market development encourages growth in Nigeria's economy was validated. Two of the indicators used to capture stock market developments in Nigeria were positively related to economic growth and significant. Further, the error-correction term value indicates feedback of approximately 51 percent of the disequilibrium with the speed of adjustment to equilibrium moderately. The Johansen co-integration test shows that there exists a long-run relationship between Real GDP and the stock market indicators. The Nigeria Stock Exchange (NSE) at the level of efficiency in a semi-strong or strong form in Nigeria has contributed through market capitalization in the capital market. The All Share index result of the ECM implies that the variations in the average value of the share prices in Nigeria's capital market are positive for economic growth. However, these variations in the share prices are insignificant in determining the economy. This indicates the broad market exposure and tax benefits in Nigeria. Furthermore, capital asset investment for example, bonds which is measured by the GCF shows that if there is a higher inflow of government spending into the economy, the real gross domestic product of Nigeria will be higher. However, our findings describe that GCF hurts the Nigerian economy. A priori expectation was not achieved.

Having examined the impact of Stock Market Indicators on Nigeria's economy, the following recommendations are made:

There is a need for the Federal Government of Nigeria through the Nigeria Stock Exchange (NSE) to encourage private sector investment in the capital market. This can be done through educating and enlightening the public using experts who are competent in stock market dealings. There should be an improvement in the dealing process in the market capitalization to encourage local and foreign investors.

The continuous changes, for instance, a reconsidered capital market groundbreaking strategy recommended by the Nigerian Clergyman of Money in the Nigeria capital market ought to be maintained and sought after as the last option on the lookout. This is because it appears that the presence of an advanced and productive capital market will add to the target of quick and maintainable development.

The public authority through the Service of Works and the capital market organizations in Nigeria ought to advance more noteworthy foundation, management, need, and security of the financial exchange since this is a significant obstruction to speculation movement in Nigeria.

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