THE CAPITAL MARKET AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT
In many economies, the capital markets play a vital role as one of the most powerful drivers of economic growth and wealth creation. This study assessed the impact of the capital market on economic growth in Nigeria spanning the period of 1986-2021. The study used the Autoregressive Distributed Lag (ARDL) model to carry out its empirical analysis. The study's empirical findings showed that Nigeria's capital market positively and significantly contributed to the growth of the Nigerian economy. It found that market capitalization which is the widely used indicator in assessing the size of a capital market had a significant positive impact economic growth both in the short and the long-run run. Consequently, to improve the performance of the capital market, the study recommends that the Securities and Exchange Commission should increase the level of coordination among the capital market regulators so as to ensure efficiency in its operations, raise small investors' understanding of risk and financial literacy, make sure that long-term term credit is accessible, and, ensure that only legitimate businesses are gaining access to the capital market, among others.

Keywords: Capital market, Economic growth, Market capitalization, Stocks, Foreign Direct investment, Financial deepening.
JEL Classification: E22, G28, O16

1 INTRODUCTION

Developing nations like Nigeria recognize that in order to leverage commercial investment, better financial markets are essential (Umar, 2022). Promoting economic growth and development is the main goal of every nation. In order to do this, poor nations would need to invest significantly each year in order to achieve the Sustainable Development Goals (SDGs) (World Bank, 2022; Olowe et al., 2022; Emiola & Fagbohun, 2021). This investment requirement makes it more important than ever to develop efficient financial markets in order to leverage commercial finance. As a result, the role that capital markets play in financing the expansion of infrastructure, large corporations, and Small and Medium-Sized Enterprises (SMEs), as well as the links between these elements and economic growth, are becoming increasingly more prominent (Nkemgha et al., 2023; Azimi, 2022; Ezeibekwe, 2021).

The capital market is a financial market where securities backed by equity or long-term debt (more than a year) are bought and sold (Ikeobi, 2020; O'Sullivan & Sheffrin, 2003). The capital market connects savings and investments between capital providers and capital users through intermediaries (Didier, et al., 2021). The capital markets are a network of specialized financial institutions, a collection of infrastructure, processes, and mechanisms that facilitate connections between providers and consumers of long-term capital (Abayomi & Yakubu, 2022; Omimakinde & Otite, 2022). The capital market according to Adereti and Mayowa (2021) links the monetary sector and the real sector of the economy, which is involved in the production of goods. Given this role in the economy, Abayomi and Yakubu (2022), and Ayeni and Fanibuyan (2022) added that it is obvious that capital markets are important because they allow for real sector expansion by giving producers of goods and services as well as organizations in charge of developing infrastructure access to long-term financing.

In Nigeria, the capital market is crucial to the country's economy(Iortyer & Maji, 2022; Iyaji, & Onotaniyohwo, 2021). Data from the Central Bank of Nigeria (CBN) indicates that the Nigerian capital market has expanded in recent years (CBN, 2020). Greater investor awareness, market confidence, and comparatively stable political conditions, as well as the Federal Government's economic reform initiatives in the areas of bank and insurance firm consolidation, privatization, pension reform, and mortgage, are predominantly responsible for this increase (CBN, 2020). For instance, the all-share index has risen steadily from 5,672.7 points in 1998 to 24,085.8, 28,078.81, and 42,716.44 points as at December of 2005, 2012, and 2021 respectively (CBN, 2021). In the same vein, total market capitalisation has increased considerably from N262.5 billion in 1998 to N7,764.5 billion as at April 30, 2007, and reaching N26.76 trillion in the first quarter of 2022 (CBN, 2021).

Despite these, the price of equities has been fluctuating in the Nigerian capital market, which has not been favorable to investors and by extension, the economy (Umar, 2022; InfoGuide Nigeria, 2022). For instance, Nigeria's capital market suffered a significant slump along with others around the world during the 2009 global financial crisis. Furthermore, Nigeria's economic slumps in 2016 and 2020 are a sign of a troubled financial system (Kolawole, 2022). Abayomi and Yakubu (2022), Umar (2022), and the InfoGuide Nigeria (2022) identified additional problems, including an unstable market, industry risk, regulatory issues with the Nigerian capital market, operational shell banks or institutions, a lack of knowledge about the Nigerian capital market, a problem with the

size of the market, a problem with savings setbacks, a problem with lack of technology, and an issue with the overconcentration of the capital market.

Economic growth has historically been primarily influenced by factors like capital, labor, and technology, according to economists, however, as the recent financial crisis has shown, a lack of confidence in the financial system has serious economic effects (Abayomi and Yakubu, 2022; Udofia et al., 2022; Olubunmi (2021). As a result, academic literature has recently given the operation of financial systems a lot of attention. This is because a sound financial system makes sure that the best investments get the finance they require, while the less promising ones are denied funding, enabling an economy to fully realize its growth potential. Along this line, this study explores the impact of Nigeria's capital markets on the country's economic growth spanning 1986 to 2021.

2 LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 The Capital Market Theory

William Sharpe popularized the Capital Market Theory (CMT), which was developed in the 1960s. It was based on Modern Portfolio Theory, but introduced a risk-free asset to the portfolio mix, according to Sharpe (1964). The CMT expands Markowitz's (1952) model to take into account the introduction of a risk-free asset to the capital market. Additionally, it makes the same suppositions about investors as Markowitz Portfolio Theory: that they are logical mean variance optimizers. The CMT makes an effort to explain and forecast how capital (and occasionally financial) markets will develop over time (Qi et al., 2023). The CMT is a model that aims to price assets, most frequently shares, in terms of the tradeoff between the rewards desired by investors and the inherent risk involved. However, in studying the CMT, managers deal with issues like the role of the capital markets (this emphasizes its relevance to this study), the major capital markets, the initial public offerings and the role of the venture capital in capital markets.

2.1.2 Endogenous Growth Theory

Economic theory known as endogenous growth theory contends that a system's internal processes are what ultimately cause economic growth to occur. More specifically, according to the hypothesis, the creation of new technologies and productive, cost-effective methods of production will result from the improvement of a country's human capital.

The endogenous growth hypothesis offers a fresh viewpoint on the factors that drive economic growth. It challenged the notion of neoclassical economics by arguing that a constant rate of prosperity is determined by internal processes such as human capital, innovation, and investment capital rather than external, uncontrollable forces. Internal development, according to economists, increased expenditures in human capital and more rapid innovation can both directly contribute to productivity gains. As a result, they support institutions in the public and commercial sectors that support innovation projects and provide incentives for people and companies to be more creative, such as funding for research and development (R&D) and intellectual property rights. The capital market here serves as a source of viable investment capital through which growth enhancing investments can be channeled.

2.2 Empirical Literature

The study reviews several related and recent empirical literatures. Abayomi and Yakubu (2022) examined the impact of the capital market on the economic growth of Nigeria spanning the period of 1990 to 2020. The study used the Autoregressive Distributed Lag (ARDL) model on the variables of economic growth (proxied by RGDP), equity, government securities, bond, preference shares, and Foreign Direct Investment (FDI) to carry out the study. The analysis's findings indicate a long-term relationship between capital market development and economic growth. According to the ARDL Bound test, government stock, bonds, and preference shares have a negligible negative relationship with economic growth, whereas equity and government stock have a strong positive relationship with economic growth. In a similar study, but with different variable specification, Omimakinde and Otite (2022) examined the impact of capital market reforms on economic growth in Nigeria using Ordinary Least Square (OLS) technique on an annual times series data-set spanning the period of 1985-2020. The variables of Gross domestic product (GDP), market capitalization, all share index, value of transaction, number of listed companies, number of deals, inflation rate, and interest rate were used in carrying out the study. Findings from the study revealed that market capitalization, interest rate and number of deals had significant positive impact on Nigeria's GDP while all share index, number of listed companies, value of transaction and inflation rate were found to retard growth.

Omodero and Alege (2022) investigated the effect of each type of government bond on economic growth in Nigeria from 2003 to 2019. The study used the Multiple regression analysis on an annual time series dataset of GDP, treasury bills; Federal Government of Nigeria's (FGN) bond; treasury bond; and inflation rate. The results show that FGN bonds and Treasury bills have a positive and significant impact on Nigeria's economic growth. On the other hand, inflation and Treasury bonds have a significant and adverse impact on growth. Other government obligations and bonds, however, have only a minimal negative impact on economic expansion. In a similar study, Ihenetu and Iwo (2022) evaluated the effect of the capital market on economic growth in Nigeria covering the period of 1999 to 2020. The study used OLS technique on an annual time series data-set of GDP, market capitalization, all share index, and new issued funds. The findings revealed that market capitalization had a positive and significant effect on GDP; all share index had a negative and significant effect on GDP; and new issue funds had no significant effect on GDP during the period of the study.

Like Ihenetu and Iwo (2022), Bello et al. (2022) evaluated the impact of capital market performance on economic growth in emerging nations from 2012 to 2022. The research used content analysis to review relevant empirical studies. To examine the effects of capital market performance on economic growth in developing nations using empirical evidence, it specifically used a qualitative method employing descriptive synthesis. According to the analysis, 30% of empirical findings from studies of the capital markets and economic growth in developing countries do not match what would be expected a priori (implying that their impacts were insignificant). The study comes to the conclusion that time series analysis employing various variables and methods in emerging nations yields conflicting results.

Bringing the study back to Nigeria, Udofia et al. (2022) probed the effect of the Nigerian capital market on industrial development for the period of 1986 and 2018. The study used the Error Correction Model (ECM) on an annual time series data-set of industrial production index, gross fixed capital formation, industrial loan, and market capitalization. Like some previous studies, the study's conclusions showed that the Nigerian capital market has a positive and significant long-

term and short-term impact on the performance of the industrial sector. Also, within the Nigerian economy, Babatunde et al. (2021) examined the effects of capital market development on the Nigerian economy from 1987 to 2018. The study used the OLS technique and an annual time series data-set comprising of GDP, market capitalization, and value of transactions. The result of the study revealed that that market capitalization has a positive influence on GDP while value of transactions has a negative and insignificant influence on GDP. Still in Nigeria, Ugbogbo and Aisien (2019) examined the impact of capital market development on economic growth using annual time series data for the period 1981 to 2016. The ECM technique was used to carry out the study's estimation. The variables of Real GDP, market capitalization (proxy for capital market development), interest rate, money supply, and gross fixed capital formation were used in carrying out the study's empirical analysis. The empirical finding showed that the expansion of Nigeria's capital market has a considerable and favorable impact on economic growth over the long and short terms.

Expanding the scope of the study to Africa, Ngong et al. (2022) investigated the bond between stock market development and agricultural growth in African emerging economies from 1990 to 2020. The economies consist of Botswana, Egypt, Ghana, Kenya, Mozambique, Nigeria, South Africa, Tanzania, Tunisia, Uganda, and Zambia. Agricultural value added to GDP is the measure for agricultural growth; market capitalization, and stock value traded are the proxies for stock market development; the broad money supply (M2/GDP), physical capital, and labour were the control variables of the study. Using a Fully modified OLS (FMOLS) and dynamic OLS (DOLS) estimators, the study found that market capitalization has a negative impact on agricultural growth while stock value exchanged has a positive impact. The results also demonstrated a bidirectional causal relationship between labor and the value added to agriculture, as well as a one-way causal relationship between the added value to agriculture and market capitalization and stock value exchange. Similarly, Antwi et al. (2021) assessed the role of monetary policy on the stock market and economic growth nexus in Ghana covering the period of 1990 to 2019. The study used the ARDL model on the variables of market capitalization, commercial bank growth, inflation, labour, capital stock, and trade openness. Findings showed that economic growth, both in the short and long-run, is significantly and positively impacted by stock market development. The study also discovered evidence in favor of a strong link between monetary policy and economic development.

Azimi (2022), extending the study to Asia, used Nonlinear Autoregressive Distributed Lags (NARDL) and Dynamic Multiplier methods on a quarterly time series spanning from 2003Q1 to 2019Q1 to investigate the impact of capital and money market determinants on economic growth in China. The variables used in the study are per capita GDP growth, market capitalization, total stock traded, stock market turnover, money market rate, real interest rate, annual growth rate of the broad money, gross fixed capital formation, and net foreign direct investment. According to the findings, positive (negative) shocks to the money market rate reduce (raise) economic growth, whereas negative (positive) shocks to the real interest rate and total liquidity spur (restrain) growth in the short term. This supports the long-term link and asymmetric nexus among the indicators. Additionally, the results demonstrate that shocks to market capitalization and stock market turnover, both positive and negative, boost economic growth, whereas short- and long-term shocks to total stock trading stunt it. Also, the results of the error-correction component demonstrated that short-run asymmetries adjust to their long-run equilibrium at a predictable rate, indicating that enhanced financial institutions attract high-quality financial projects that lead to sustainable and long-term economic growth.

The literature review showed that there hasn't been enough formal research into how well financial intermediation within Nigeria's capital market supports investments that promote growth. Ngong et al's (2022) study's attempted to capture financial intermediation, but it was a cross-country analysis. Similar to this, Ugbogbo and Aisien (2019) made an effort to use the money supply to capture financial deepening, but their scope (1981 to 2016) did not include recent trends in Nigeria's capital market. In order to confirm the effect and offer a thorough explanation, this study uniquely utilizes current trends to examine the relationship between market capitalization and economic growth as well as how the transmission mechanism through effective financial intermediation may affect this relationship.

3 METHODOLOGY

3.1 Theoretical Framework

Endogenous Growth Model: The AK model of endogenous growth was used as the theoretical framework of this study. Harrod (1939), and Domar (1946), who assumed a fixed-coefficient aggregate production function, were the authors of the first versions of this model. Frankel (1962) developed the first AK model with substitutable factors and knowledge externalities in order to reconcile the positive long-run growth outcome of Harrod-Domar with the factor substitutability and market clearing elements of the neoclassical model. The Frankel model showed a constant savings rate, in contrast to Romer's (1986) AK model with intertemporal consumer maximization. The idea that learning-by-doing externalities could boost productivity was put forth by Arrow in 1962. Then, Lucas (1988) developed an AK model, according to which the growth of human capital makes it easier to produce and disseminate knowledge. These AK models are important because they describe how capital contributes to economies' long-term growth.

This study especially uses the AK model, the first iteration of endogenous growth theory that did not make a clear distinction between capital accumulation and technical innovation. In essence, it integrated the accumulated physical and human capital with the intellectual capital that emerges when innovations occur. An early form of the AK theory was proposed by Frankel (1962), who argued that the aggregate production function may demonstrate a constant or even rising marginal product of capital. This is done so that businesses can accumulate more capital to counteract the tendency for the marginal output of capital to diminish. Total output Y is proportional to total capital stock K in the particular case where the marginal product of capital is constant;

$$Y=AK \qquad 3.1$$

where K is assumed to be the capital component in this case and A is a positive constant that reflects the level of technology. Long-term growth is conceivable given that the marginal product to capital in this scenario remains constant. Thus, using the financial intermediation offered by the capital market, the AK model in this instance provides a straightforward way to illustrate endogenous growth.

3.2 Types and sources of Data

The study used secondary data to carry out its empirical analysis. In particularly, it used annual time series data spanning 1986 to 2021. The data were soured from the 2021 Annual CBN Statistical Bulletin and the 2021 World Bank Data-base.

3.3 Method of Analysis

To determine the impact of the capital market on economic growth in Nigeria, the study used the Autoregressive Distributed Lag (ARDL) model. According to Kripfganz and Schneider (2016), the ARDL model has been used over time to model the relationship between (economic) variables in a single-equation time-series setup. The ARDL model proposed by Pesaran et al. (2001) is autoregressive in the sense that the dependent variable is explained by its own lag, and also having a distributive lag component in the form of successive lag independent variable. The model enjoys several advantages over conventional cointegration technics. First, ARDL is superior to conventional cointegration technics when it is used on a small sample size; second, it allows for both short-run and long-run relation to be tested simultaneously; third, the approach provides unbiased estimates for long-run and valid t test when some regressors are endogenous; and fourth, the variables are tested irrespective of whether a variable is 1(0) or 1(1).

3.4 Model specification

The study adapted the study by Ugbogbo and Aisien (2019). While Ugbogbo and Aisien (2019) used the variables of Real GDP, market capitalization, interest rate, money supply, and gross fixed capital formation; this study differed by using the variables of GDP, market capitalization, volume of shares, FDI, and financial deepening instead of money supply to better capture the transmission mechanism in the capital market-cum-growth relationship. The functional and baseline models are presented as Equations 3.2 and 3.3 respectively;

$$GDP=f(MCAP,VSHARE,FDI,FINDEEP) \quad 3.2$$

$$LnGDP = \alpha_0 + \sum_{i=0}^{n} \alpha_{1i} LnMCAP_t + \sum_{i=0}^{n} \alpha_{2i} LnVSHARE_t + \sum_{i=0}^{n} \alpha_{3i} LnFDI_t + \sum_{i=0}^{n} \alpha_{4i} LnFINDEEP_t + \mu_t \quad 3.3$$

where, GDP proxies economic growth, *MCAP* represents market capitalization, *VSHARE* stands for the volume of shares, *FDI* represents Foreign Direct Investment, *FINDEEP* represents financial deepening (proxied by M_3/GDP in %), α_0 is the intercept, α_1 to α_4 are the coefficients of the variables, while μ_0 represents the error term.

3.5 Estimation Procedure

3.5.1 Descriptive statistics: The study carried out the descriptive statistics which summarizes the basic statistical features of the data-set under consideration. It considered the mean, the minimum and maximum values, standard deviation, skewness, kurtosis, and the Jarque-Bera test for the data. These descriptive statistics shall provide a historical background for the behavior of the data.

3.5.2 Unit Root Test: An ADF test tests the null hypothesis that a unit root is present in a time series sample, while the alternative hypothesis is stationarity or trend-stationarity. The ADF procedure is an augmented version of the Dickey-Fuller test for a larger and more complicated set of time series models.

3.5.3 The ARDL Approach to Co-integration: The ARDL method involves these steps; the first step after stationarity test is to examine the presence of co-integration using the bounds testing procedure (Pesaran, Shin and Smith, 2001). The second step is to estimate the coefficient of the long-run relationships. Having found long-run relationships among the variables, in the next step the long-run relationship is estimated. The third step is to estimate the short-run dynamic

coefficients. The fourth stage involves testing for the stability of the model, by using the Cumulative sum of recursive residuals (CUSUM) and the Cumulative sum of squares of recursive residuals (CUSUMSQ). The ARDL model is written as;

$$Y_t = \alpha_0 + \varphi_t Y_{t-1} + \beta_t X_{t-1} + \varepsilon_t \qquad 3.4$$

where, Y_{t-1} and X_{t-1} are time series variables, ε_t is the vector of the stochastic error term. Generally, the model can also be defined as ARDL (p, q) the p and q are lag of the parameter which forms Equation [3.5];

$$y_t = \alpha_0 + \sum_{i=0}^{p} \varphi_i y_{t-1} + \sum_{j=0}^{q} \beta_j x_{t-1} + \varepsilon_t \qquad 3.5$$

In view of the above explanation, the ARDL model used in this study is presented as;

$$\begin{aligned} \Delta LnGDP_t = \alpha_0 &+ \sum_{t=0}^{p} \pi_1 \Delta LnGDP_{t-1} + \sum_{t=0}^{p} \pi_2 \Delta LnMCAP_{t-1} + \sum_{t=0}^{p} \pi_3 \Delta LnVSHARE_{t-1} \\ &+ \sum_{t=0}^{p} \pi_4 \Delta LnFDI_{t-1} + \sum_{t=0}^{p} \pi_5 \Delta LnFINDEEP_{t-1} + \alpha_1 LnGDP_{t-1} \\ &+ \alpha_2 LnMCAP_{t-1} + \alpha_3 LnVSHARE_{t-1} + \alpha_4 LnFDI_{t-1} \\ &+ \alpha_5 LnFINDEEP_{t-1} + \varepsilon_t \end{aligned} \qquad 3.6$$

where, *LnGDP, LnMCAP, LnVSHARE, LnFDI, LnFINDEEP* are as earlier defined, α_0 is the intercept, $\pi_1, \pi_2, \pi_3, \pi_4$ and π_5 indicates the short-run dynamic coefficients of the model, α_1, α_2, α_3, α_4 and α_5 are the long-run multipliers, *t* is the time dimension, Δ is the first difference operator and ε_t is a white noise error term.

The selection of ARDL maximum lag (p q) is based on the automatic lag length selection in the E-views. The study derived the short-run dynamic parameter from the Error Correction Model (ECM) estimation, associated with the long-run estimate as given below;

$$\begin{aligned} LnGDP_t = \alpha_0 &+ \sum_{t=0}^{p} \pi_1 LnMCAP_{t-1} + \sum_{t=0}^{p} \pi_2 LnVSHARE_{t-1} + \sum_{t=0}^{p} \pi_3 LnFDI_{t-1} \\ &+ \sum_{t=0}^{p} \pi_4 LnFDI_{t-1} + \sum_{t=0}^{p} \pi_5 LnFINDEEP_{t-1} + \omega ECM_{t-1} + \varepsilon_t \end{aligned} \qquad 3.7$$

where, α_0 is the intercept, $\pi_1, \pi_2, \pi_3, \pi_4$, and π_5 are the dynamic adjustment coefficients, ECM_{t-1} is the speed of adjustment parameter and error correction model originating from the estimated equilibrium relationship.

Bound Test- The Bound test models the ARDL equation by the use of least square procedure to investigate the existence of long-run relationship in the model, the *F*-statistics test is conducted for the joint significance of the coefficient of lagged variables, $H_0: \alpha_0 = \pi_1 = \pi_2 = \pi_3 = \pi_4 = \pi_5 = 0$ against the alternative $H_1: \alpha_0 \neq \pi_1 \neq \pi_2 \neq \pi_3 \neq \pi_4 \neq \pi_5 \neq 0$. The calculated F-statistics is compared to the critical value. If the *F*-statistics value lies above the upper bound of critical value, the null hypothesis is rejected. If the *F*-statistic value falls below the lower bound of critical value, the null hypotheses cannot be rejected that is, there is no long-run relationship among the variables, however, if the *F*-statistic value lies within the bound test the result is inconclusive.

3.5.4 Residual Diagnostic Tests: To validate the results of ARDL model, the Breusch-Godfrey serial correlation LM test, the Jarque-Bera test, and the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) tests were used to test for serial correlation, normality, and the stability of the ARDL model respectively.

4 RESULTS AND DISCUSSION OF FINDINGS

4.1 Descriptive Statistics

Table 1 displays the findings of the descriptive statistics.

Table 1: *Descriptive Statistics Result*

	GDP	*MCAP*	*VSHARE*	*FDI*	*FINDEEP*
Mean	4.09E+13	8289.006	842277.5	1.626111	16.00278
Maximum	7.34E+13	42054.50	3535631.	5.790000	24.90000
Minimum	1.72E+13	6.800000	20525.00	0.200000	8.460000
Skewness	0.406403	1.460306	1.313774	1.686831	0.332303
Kurtosis	1.542391	4.560667	4.188283	5.800710	1.448471
Jarque-Bera	4.177917	16.44848	12.47403	28.83835	4.273418
Probability	0.123816	0.000268	0.001956	0.000001	0.118043
Observations	36	36	36	36	36

Source: *Authors' computation using E-views.*

The difference between the minimum and maximum values of each series, when compared to the mean values of each data set, revealed evidence of considerable variances. Only *GDP* and *FINDEEP's* skewness were normally distributed since samples from a normal distribution have an estimated skewness of 0. Only *GDP* and *FINDEEP* showed normal kurtosis since the values of asymmetry and kurtosis between -2 and +2 are regarded as acceptable for demonstrating a normal univariate distribution. The Jarque-Bera test also serves as a goodness-of-fit test, determining whether sample data have skewness and kurtosis that are consistent with a normal distribution. The Jarque-Bera statistics similarly reveals that only the Skewness and Kurtosis of *GDP* and *FINDEEP* were normally distributed at a probability value of 5%. Individual statistical analysis, however, does not render subsequent analysis invalid (Halvorsen, 2015).

4.2 Unit Root Test

Table 2 displays the outcomes of the Augmented Dickey-Fuller (ADF) unit root tests.

For the ADF test, if a data set's estimated value is higher than its critical value after the ADF test, it is considered stationary. Table 2's outcome reveals that only *FDI* and *GDP* were stationary at levels. However, after first difference, *MCAP*, *VSHARE*, and *FINDEEP* became stationary. As a result, the data sets satisfied the stationarity requirement for performing the ARDL estimation.

Table 2: *Augmented Dickey-Fuller (ADF) Unit Root Test Result*

Variables	***ADF Test***		
	Levels	**1st Difference**	**Inference**
GDP	-3.673114	-	*1(0)*
	(-3.562882)		
MCAP	0.277373	-5.592509	*1(1)*
	(-3.544284)	(-3.548490)	
VSHARE	-2.611340	-5.644045	*1(1)*
	(-3.544284)	(-3.552973)	
FDI	-4.401565	-	*1(0)*
	(-3.544284)		
FINDEEP	-2.644363	-5.309254	*1(1)*
	(-3.548490)	(-3.548490)	

Figures in parenthesis represents the critical values at the 5% level

Source: *Authors' computation using E-views.*

4.3. ARDL Results

The short-run and long-run estimates are provided with the ARDL optimal lag structure, which was determined by the ARDL Bound test to be (4, 1, 4, 3, 4).

4.3.1 The ARDL Bound Test

The ARDL Bound test was used to demonstrate that co-integration was present in the model. The outcomes of the ARDL bound test are shown in Table 3.

Table 3: *ARDL Bound Test Result*

F-Bounds Test	**Null Hypothesis: No levels relationship**			
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	6.080298	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: *Authors' computation using E-view.*

Table 3's Bounds test result revealed that the F-statistics value was 6.08. At all levels of significance this value exceeds the upper bound critical values of I(1). The model's long-run relationship was therefore established by this finding, and as a result, we proceeded on to obtain the equation's short-run and long-run forms.

4.3.2 Short and Long-run forms of ARDL model

Tables 4 and 5 below provide the ARDL model's short-run and long-run estimates.

ARDL Short-run Model Result

The short-run equation in Table 4 estimate's the coefficient of co-integration (CointEq (-1)), which depicts how rapidly variables adapt to a shock and return to equilibrium. At the 1% level, the CointEq (-1) was highly statistically significant, with an estimated coefficient of -0.41. This shows that the model made a 41% annual correction for the divergence from the present economic growth path. The model has a high goodness of fit, as indicated by the R-squared value of 94%. It means that the independent variables as a whole account for a sizable portion of the variance in the dependent variable.

In the short run, economic growth was positively and significantly impacted by the market capitalization coefficient (*LnMCAP*). Market capitalization in the short term increased economic growth by 5%. The coefficients of share volume (*LnVSHARE*), on the other hand, had a considerable negative impact on economic growth, with the exception of the second lag. The large majority of negative coefficients for *LnSHARE* show that the market's negative share volume reflects the lack of value of many shares on the stock exchange, which has a detrimental impact on growth. This implies that investors are hesitant to acquire at particular prices and worried that they won't be able to sell should anything unexpected occur within particular time frames in the short-run.

Table 4: *ARDL Short-run Model Result*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LnGDP(-1))	0.367273	0.151359	2.426506	0.0336
D(LnGDP(-2))	0.277216	0.161355	1.718050	0.1138
D(LnGDP(-3))	-0.662810	0.138349	-4.790848	0.0006
D(LnMCAP)	0.046030	0.012314	3.738005	0.0033
D(LNVSHARE)	-0.062532	0.009812	-6.372695	0.0001
D(LnVSHARE(-1))	-0.076936	0.018474	-4.164444	0.0016
D(LnVSHARE(-2))	0.039989	0.011581	3.452931	0.0054
D(LnVSHARE(-3))	-0.020166	0.008747	-2.305522	0.0416
D(LnFDI)	0.003551	0.006269	0.566501	0.5824
D(LnFDI(-1))	0.027547	0.007649	3.601234	0.0042
D(LnFDI(-2))	0.012956	0.005852	2.213911	0.0489
D(LnFINDEEP)	0.049368	0.027698	1.782325	0.1023
D(LnFINDEEP(-1))	0.262486	0.042618	6.159094	0.0001
D(LnFINDEEP(-2))	0.182499	0.045141	4.042854	0.0019
D(LnFINDEEP(-3))	0.170893	0.035179	4.857868	0.0005
CointEq(-1)*	-0.407086	0.055884	-7.284533	0.0000
R-squared	0.937079			
Adjusted R-squared	0.878090			

Source: *Authors' computation using E-view 12*

The foreign direct investment (*LnFDI*) coefficient contributed to the expansion of the economy. Only the first lag, however, was discovered to be statistically significant. The main coefficient result showed that FDI enhanced economic growth in the short term by a negligible 0.004%. Its positive but low lag values also imply that *FDI* has a negligible impact on output, implying that it has little immediate impact on Nigeria's economic growth in the short-run. For all periods, the short-run economic growth was positively and statistically significantly impacted by the financial deepening coefficient (*LnFINDEEP*). An analysis of its coefficient values reveals that financial deepening makes a sizable contribution to economic growth in the shoert-run.

The short-term estimates indicate that the basic capital market variables, specifically market capitalization, which is a widely used metric to gauge the size (effect) of a capital market on an economy, have favorably impacted the expansion of the latter. The research of Udofia et al. (2022), and that of Ugbogbo and Aisien (2019), which demonstrated that the capital market had a considerable short-run impact on the growth of the Nigerian economy, supports this.

ARDL Long-run Model Result

Table 5 displays the outcomes of the ARDL long-run estimates. On economic growth, the long-run coefficient of market capitalization (*LnMCAP*) demonstrated a favorable and statistically significant effect. According to its coefficient, market capitalisation spurs economic growth by 15%. This shows that market capitalization, the most prevalent statistic for estimating the size of a capital market to an economy, shows that within the capital market, market capitalization and economic growth are positively and significantly correlated in Nigeria, and that quicker rates of growth are enabled by it. A related discovery was reported by Ugbogbo and Aisien (2019), as well as Udofia et al. (2022). Contrary to the short-run, the long-run coefficient of share volume (*LnVSHARE*), a key capital market variable in the model, had a favorable and statistically

significant impact on economic growth. The coefficient shows a 45% improvement in growth due to the volume of shares traded on Nigeria's capital market.

Table 5: *ARDL Long-run Model Result*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnMCAP	0.154524	0.062662	2.466009	0.0313
LnVSHARE	0.454746	0.116626	3.899180	0.0025
LnFDI	0.140035	0.031818	4.401172	0.0011
LnFINDEEP	0.583039	0.086143	6.768246	0.0000
C	25.31894	0.833787	30.36618	0.0000

Source: *Authors' computation using E-view.*

Foreign Direct Investment (*LnFDI*) which represents the movement of investment into the economy, and which is also a significant in the capital market equally had a significant positive effect on then Nigerian economy. Its coefficient shows that it increased growth by 14%. This result points to the fact that FDI inflows into the Nigeria economy is growth enhancing. Equally, the variable for financial deepening (*LnFINDEEP*) within the model which captures the depth and reach of the market, and how this is transmitted to the economy had a positive and statistically significant impact on the economy. Its coefficient states that financial intermediation through the capital market facilitates economic growth by 58%.

In conclusion, this study employing the long-run ARDL estimates confirms what Ugbogbo and Aisien (2019) found and shows that the capital market accelerates financial development, which consequently accelerates economic expansion. It accomplishes this through promoting information interchange, increasing the allocation of resources, mobilizing funds, and simplifying risk management and diversification. These aid in facilitating economic growth.

4.3.4 Residual Diagnostic Tests

Serial correlation, normality, and stability checks were carried out on the study's residuals.

Breusch-Godfrey Serial Correlation LM Test Result: As seen on Table 6, serial correlation was examined using the Breusch-Godfrey serial correlation LM test.

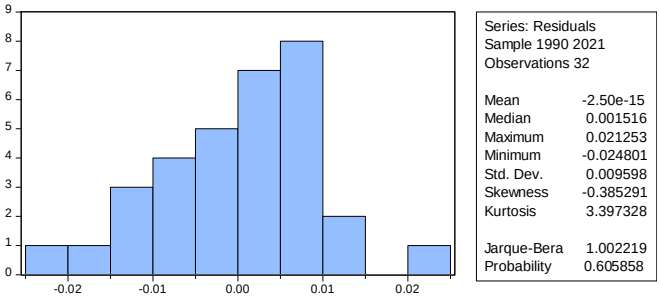
Table 6: *Breusch-Godfrey Serial Correlation LM Test*

F-statistic	0.721763	Prob. F(2,9)	0.5044
Obs*R-squared	3.198168	Prob. Chi-Square(2)	0.2021

Source: *Authors computation using E-view 12*

As a result of the probability of its F-statistics value of 0.50 being larger than the 5% level, the Breusch-Godfrey LM test result accepted the null hypothesis that there was no serial correlation in the residual. As a result, the serial autocorrelation issue was not present in the ARDL model.

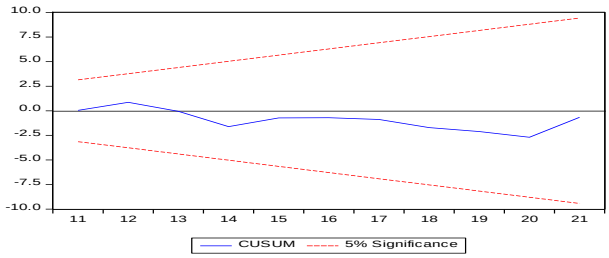
Jarque-Bera Normality Test Result: The distribution of the residuals in the ARDL model was determined using the Jarque-Bera test result as shown on Figure 1.



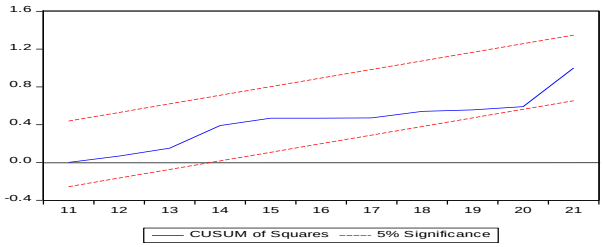
Source: *Authors computation using E-view 12*
Figure 1: *Jarque-Bera Normality Test Result*

The Jarque-Bera statistics' output has skewness and kurtosis that are consistent with characteristics of a normal distribution. The null hypothesis for this test, which states that the residuals are normally distributed, is accepted since the probability value of the Jarque-Bera statistics, which is 61%, is greater than the 5% level.

CUSUM and CUSUMSQ Stability Test Results: Figures 2 and 3 show, respectively, the outcomes of the CUSUM and CUSUMSQ tests used to check the stability of the ARDL model. The residuals of the calculated model are subjected to the tests. The ARDL model is stable, as shown by the CUSUM and CUSUMSQ statistics plots on Figures 2 and 3, respectively, which were all contained within the two straight lines.



Source: *Authors computation using E-view 12*
*Figure 2: *CUSUM Plot Result*



Source: *Authors computation using E-view 12*
Figure 3: *CUSUMSQ Plot Result*

5 CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

The study comes to the conclusion that the capital market considerably and positively influences the expansion of the Nigerian economy. The study came to the conclusion that market capitalization, the most used metric for measuring the size of a capital market, has a considerable

beneficial impact on the economy over the long and short terms. Long-term results on the effect of the volume of market shares on the economy came to a similar conclusion.

5.2 Policy Recommendation

The study offered a number of suggestions that were consistent with its findings. Through the Securities and Exchange Commission (SEC), the government must implement measures that will increase market capitalization and share volumes throughout the short- and long-term. Investors will receive the funds they require in this way, increasing investment activity and, ultimately, Nigerian productivity. Thus, in order to ensure efficiency in its operations, the SEC must: increase the level of coordination between the capital market regulators; increase small investors' understanding of risk and financial literacy; ensure that long-term term credit is accessible; ensure that only legitimate businesses are gaining access to the capital market; and, increase private sector capital market investment. The complete adoption of the aforementioned procedures will guarantee that financial market investments lead to economic growth.

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