



## The Nexus Between Capital Market and economic growth in Nigeria: A VECM Approach

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### Abstract

*This study evaluates the impact of capital market on economic growth in Nigeria from 1982 to 2022. The study analysed the relationship between Gross Domestic Product (GDP) as the dependent variable and various independent variables such as market capitalization, All-Share Index, financial deepening and gross capital formation. The study employed Vector Error Correction Mode (VECM) as technique of estimation. The empirical analysis started with the modelling and examination of the time series property of the data used. Specifically, we conducted the descriptive analysis, and stationarity test using Augmented Dickey-Fuller (ADF) unit root test. The result of the unit root test revealed the stationary properties of the variables are  $I(1)$  i.e. the variables are stationary at first difference. The Johansen cointegration test shows presence of long-run relationship among the variables of interest, hence our justification for using Vector Error Correction Mode (VECM) as our choice of estimation technique. VECM result revealed that All-Share Index, Market Capitalisation, Gross Capital Formation, Financial Deepening are positive and significantly impacted economic growth during the period under study. The study recommends strengthening market regulations and investor protection measures to enhance confidence in the securities market by policymakers. Simultaneously, promoting transparency and efficiency in market operations by the policy makers will attract both domestic and foreign investors, contributing to a vibrant market. This, in turn, will drive capital mobilization and stimulate economic growth.*

**Keywords:** Capital Markets, Economic Growth, VECM

### I. Introduction

The aftermath of the 2007-2008 financial crisis has sparked heightened interest in the financial sector globally. There is a particular emphasis on the necessity to bolster the capital

markets of developing nations to shield them from the adverse impacts of future financial crises. This call is especially crucial for developing countries at large, with Nigeria standing out as a notable case. Nigeria has recently gained recognition as a 'frontier' or emerging market on the international stage (Boseler, 2013). However, its capital market lags behind those of other jurisdictions in terms of development. Consequently, it has struggled to effectively meet the long-term capital requirements of deficit sectors by efficiently mobilizing funds from surplus units and directing them toward productive economic ventures.

The All-Share Index and market capitalization are the two major indicators that track the performance of the exchange. The four major instruments traded on the exchange are government securities, fixed-income securities, equities, and exchange-traded funds. The market participants in the capital market include securities exchanges, commodity exchanges, central depositories, central counterparties, issuing houses, brokers, dealers, fund managers, solicitors, reporting accountants, custodians, digital sub-brokers, and investment advisers.

Numerous shareholders feel that the Central Bank of Nigeria's successful recapitalization of Nigerian banks in 2005 benefited the performance of the Nigerian Exchange Limited. This was owing to an increase in the number of listings, transactions, and foreign investment inflows, all of which contributed to better economic growth (Onuoha et al., 2021). The 2008 global financial crisis, which originated in the United States, had a global impact on several capital markets. The worldwide meltdown influenced the performance of the Nigerian capital market, resulting in the loss of capital assets and investments (Njiforti, 2015). According to Arumona et al. (2020), the recent financial crisis has important repercussions for the financial



system, necessitating more research into the patterns.

A capital market must efficiently convert savings into investments to build the relationship between financial development and economic growth (Hossain, 2020). The capital market, often known as the stock market, serves as a trading platform for stocks. It makes it easier to mobilize and use cash for long-term investments (Grbic, 2020). This set of financial institutions was formed to provide short- and long-term financing through the use of securities such as mortgage loans, corporate bonds, government securities, and corporate shares (Nwamuo, 2018). Capital markets are essentially formed in any economy to stimulate economic activity, which leads to economic growth (Ugbogbo & Aisien, 2019).

The Market is expected to be a significant factor that will propel significant economic growth in the future, which will place Nigeria among the world's top 10 biggest economies come the year 2050 (Fidelity Worldwide Investment, 2011; O'Neil, 2013). It is expected that the development of the Nigerian capital market will have a great effect that will lead to subsequent growth in the private sector, which will in turn cause an increase in the overall wealth of the economy through wage increases, higher standards of living of employees, business expansions and more tax funds to Governments, finally effecting an increase in overall spending for nation building, capital and infrastructural developments (Lenee and Oki, 2017). Unfortunately, it is more likely that a break in this chain due to endogenous and exogenous challenges that are affecting the operations of the market may cause arbitrary effects on final outcomes. For instance, the market is not immune to unstable prices as occasioned in the 2008/2009 crash and more recently in 2017, making the market to be essentially risky and unpredictable for investors.

The market suffers shallowness in terms of relevant securities such as sustainability instruments, asset-backed securities, mortgage-backed securities, and other structured instruments. The market also suffers from double taxation as well as the high cost of raising funds by companies as they have to incur additional costs such as brokerage fees, and stamp duties, aside from other costs that may be imposed by the Securities and Exchange Commission and other professional parties. Finally, there is also the issues of macroeconomic fluctuation, in the form of fluctuation in exchange and interest rates and actual

negative rate of returns, which often force investors to move to other investment outlets or out of the economy entirely (SEC Master Plan, 2015-2025).

In Nigeria, empirical studies have sought to examine the relevance of the capital market to the aggregate economic business. However, some essential variables have been missed in prior studies assessing the influence of the capital market on Nigeria's economic growth, such as those of Ugbogbo and Aisien, 2019; Agu, 2018; Alajekwu and Achugbu, 2012; Algaed, 2020; Udo, Nwezeaku, and Kanu, 2021, and others. These studies, in particular, did not include the variables of gross capital formation and financial deepening in their models. This study therefore introduces these variables which have not been extensively explored in previous studies on the subject matter. By including these variables, the research aims to fill a significant research gap and expand the existing knowledge base. This contributes to the advancement of the literature on the relationship between capital markets and economic growth, providing a more comprehensive and nuanced understanding of the underlying dynamics. To this end, the rest of the study is structured as follows: section two discusses theoretical issues and review of the empirical literature; section three covers methodology and data issues; section four entails analysis of data and section five entails conclusion and policy recommendations.

## II. Theoretical and Empirical Review

### *Theoretical Review*

Based on the theoretical review of the relationship between capital market and economic growth, the theoretical framework for this study follows the Endogenous growth model. The endogenous growth model emphasizes the role of technological progress, human capital, innovation, and knowledge accumulation as key drivers of sustained economic growth. The adoption of endogenous growth model as the theoretical framework is in line with other studies that have utilised the model to determine the relationship between capital markets and economic growth. Specifically, it follows a simple Endogenous growth model of the form AK model developed by Pagano (1993).

The importance of capital markets and other elements as necessary for economic growth is emphasized by the Pagano model. He sees the model's production function as a condensed version that derives from Lucas (1988) and Romer's prior research. According to the Lucas endogenous



growth model, it is possible to calculate the AK by supposing that  $K_t$  is made up of both human and physical capital and that both forms of capital are replicable using the same technologies. The country's economy is competitive with foreign economies under the Romer endogenous growth

model, where each business must deal with technology, with constant returns to scale, but efficiency is a rising function of total capital stock,  $K_t$ . Consequently, the Pagano model, which assumes that total production is a linear function of total capital stock is presented below:

$$Y_t = AK_t \dots\dots\dots(2.4)$$

Where  $Y$  = aggregate output

$A$  = marginal productivity of capital

$K$  = total capital stock which comprises both physical and human capital and depreciates at rate,  $\delta$ .

It is assumed that the population is stationary and the economy produces a single good that can be invested or consumed and if invested, depreciates at the rate  $\delta$  per period. Therefore, the Gross investment is given as:

$$I_t = K_{t+1} - (1 - \delta)K_t \dots\dots\dots(2.5)$$

The capital market equilibrium requires that gross investment equals gross saving in a closed economy with no government. It is assumed that a proportion of the gross saving  $(1 - \phi)$ , is lost in the process of financial intermediation process:

$$I_t = \phi S_t \dots\dots\dots(2.6)$$

From equation (2.4), the growth rate at time  $t + 1$  is

$$g_{t+1} = Y_{t+1}/Y_t - 1 = K_{t+1}/K_t - 1 \dots\dots\dots(2.7)$$

Using equation (2.5), the economic growth rate can be written as:

$$g = A I/Y - \delta = A \phi s - \delta \dots\dots\dots(2.8)$$

Where  $s$  denotes the gross saving rate  $S/Y$

Equation (2.8), which depicts the endogenous growth model, explains how capital markets may impact growth. There are three ways to do this: First off, by eliminating resource leakages and boosting the financial system's effectiveness, it can increase the percentage of savings going toward investments. Second, by gathering data to assess different investment projects and encouraging people to engage in riskier but more productive technologies by offering risk sharing, it also raises  $A$ , the marginal productivity of capital. Thirdly, by making credit easily accessible and diversifying the rate of risk and return in the capital market by economic agents, it can affect the private savings rate. In conclusion, the model posits that the steady state of growth rate depends positively on the percentage of savings channelled to investment.

*Empirical Review*

Rafay et al. (2023) utilised the Vector Error Correction technique to examine the impact of economic forces on the capital market of Pakistan over the period of 1980-2019. The authors focused on both the long-run and short-run effects of these forces. The findings indicate a positive relationship between the growth of the banking sector and gross domestic product, whereas inflation, trade openness, and foreign direct investment have a negative impact on the development of the capital market. In the short run,

the variables that have been determined to be statistically significant are gross domestic product (GDP), inflation, and foreign direct investment (FDI). The presence of a negative error correction term suggests that in the short term, if the variables deviate from their equilibrium level by 1%, they will converge back to equilibrium at an annual rate of 74.3%. The findings of this study hold considerable practical relevance for policy makers and government officials in relation to the advancement of the stock market.

Lawrence and Joy (2023) employed the Vector Error Correction model (VECM) to examine the influence of the Nigerian capital market on economic growth using time series from 1985 to 2018. Economic growth, as measured by Real Gross Domestic Product (RGDP), is the dependent variable, whereas the independent variables are Stock Market Turn Over Ratio (SMTOR), Market Capitalization (MCAP), Financial Deepening (FINDEEP), and All-Share Index (ASI). According to the VECM results, all of the independent variables of interest have significant impact on economic growth in Nigeria throughout the research period. However, in the long term, SMTOR and MCAP have positive impact on growth while FINDEEP and ASI have negative impact on economic growth.

Similarly, Adamu and Mustafa (2023) investigated the correlation between the capital market and economic growth in Nigeria throughout



the period spanning from 1985 to 2021. They utilized Johansen co-integration and Vector Error Correction Model (VECM) methodologies to examine the relationship between dependent and independent variables. Their empirical findings indicate that, in the long-term, the Johansen Normalised Cointegration method demonstrates that the share index and total value of transactions have a detrimental effect on economic growth, while market capitalization and number of deals have a beneficial impact. Furthermore, the findings from the short-term analysis indicate that economic growth is positively influenced by the all share index, number of deals, and total value of transactions. Conversely, market capitalization has a negative relationship with economic growth. The results also indicate that the Nigerian capital market could experience advantages if the real sector and other regulatory authorities actively engage in activities such as expanding the production base, enhancing public awareness, and reducing entry and listing requirements.

In the same vein, Akujinma and Kenchukwu (2023) examined the influence of capital market performance on the lowering of the unemployment rate in Nigeria during the period from 2000 to 2021. The study examined the impact of several independent variables, namely the All-Share Index (ALS), Market size (MZ), Turnover ratio (TR), and Value of new equity offerings (STV), on the Unemployment rate (UNE). The data was analysed using an Error Correction Mechanism. The findings of the analysis suggest that there is a positive albeit statistically insignificant relationship between capital market performance and the reduction of unemployment in Nigeria. Therefore, the study suggests the necessity of decreasing the regulatory burden on enterprises while promoting a favourable policy climate that fosters capital formation within the market. There is a necessity to enhance public awareness regarding the functioning of the stock market. Companies that are either fully owned by the government or have a partial privatisation should be included on the stock exchange, since this would contribute to the expansion of the market size.

Further, Omimakinde and Otite (2022) conducted empirical research to determine whether there is a link between capital market deregulation and the growth of the Nigerian economy. The analysis utilizes annual secondary data from the CBN Statistical Bulletin as well as the World Development Index (WDI) for the years 1981 to

2017. While GDP was the dependent variable, the independent variables were Market Capitalization (MCA), transaction value (VOT), all share index (ASI), number of deals (NOD), number of listed Securities (NLS), Interest Rate (INT), and Inflation Rate (INF). Ordinary least square method was employed as techniques of estimation. The empirical findings indicated that MCA and INT had a positive influence on GDP, but NLS had a negative impact during the period of the study.

Ighoroje and Eloho (2022) employed vector error correction model to examine the degree to which financial sector activities have aided Nigerian economic development. The study utilizes annual time series data from the CBN Statistical Bulletin from 2008 to 2020. While real GDP was the dependent variable, the independent variables were market capitalization (MCA), turnover ratio (TUR), All Share Index (ASI), Commercial Paper (COP), bankers' acceptance (BAA), and Treasury Bills (TBL). According to their results, MCA and TBL have positive and significant impacts on RGDP while ASI has a negative but significant impact on RGDP.

Omankhanlen et. al. (2022) used Autoregressive Distributed Lag (ARDL) to investigate the influence of financial development on Nigerian economic growth. The analysis relied on secondary sources of yearly data from 1990 to 2019. The dependent variable was real GDP (RGDP), whereas the independent variables were the financial deepening, the credit to private sector to GDP ratio (CPSGDP), and market capitalization (MKTCAP). The results of the Autoregressive Distributed Lag (ARDL) regression analysis revealed that the all-shares index had a positive and significant relationship with GDP in Nigeria for the periods studied, while the number of deals and market capitalization relationships were positively insignificant, and the volume of trade relationship was negatively insignificant with economic growth.

Ibekwe and Ogomegbunam (2022) employed Ordinary Least Squares (OLS) regression to examine the impact of financial markets and monetary policy on the Nigerian economy using time series data from 2002 to 2020. The dependent variable was GDP, whereas the independent variables were money supply (M2), market capitalization (MCAP), and interest rate (IR). The findings of the study revealed that MCAP and M2 have positive and significant impact on GDP, while interest rate has a negative



but insignificant impact on the GDP. Umar (2022a) used the Systematic Quantitative Assessment Technique (SQAT) to investigate how Nigeria's capital market affects the country's economic growth. The study came to the conclusion that capital market performance had an impact on economic growth, even though there were regional differences in how developed capital markets were. It was suggested that given the obvious connection between capital market performance and economic growth, capital market research ought to receive more attention.

Bello et al. (2022) evaluated the impact of capital market performance on economic growth in emerging nations throughout the timeframe of 2012 to 2022, employing empirical evidence. The primary aim of their study was to investigate the influence of market capitalization on the actual Gross Domestic Product (GDP) within emerging countries. The study utilised a qualitative technique such as descriptive statistics and autoregressive distributed lag model, to assess the impact of capital market performance on economic growth in developing nations. Their findings revealed that market capitalization has a positive and significant impact on economic growth.

Jarrar (2021) examined the impact of stock market development on the economy of Jordan using secondary time series data. The study employed the Autoregressive Distributed Lag (ARDL) approach as a method of estimation. The results indicate that the positive impact of stock growth and private sector credit expansion on the economic prosperity and development of the Jordanian economy is evident. Additionally, the research findings also suggest that foreign direct investment, which also has an impact on the country's stock market, has long-term implications for the country's economic development. Moreover, the research findings additionally demonstrate that the economic development of Jordan remains unaffected by the allocation of domestic credit to the private sector. Nevertheless, the research findings indicate that the impact of stock exchange on the development and expansion of the Jordanian economy is negligible. Hossin and Hamid (2021) investigated the impact of capital market performance on the economic growth of Bangladesh throughout the period spanning from 2001 to 2018. The findings of the vector error correction model indicated the presence of a cointegrating relationship between market capitalization and stock turnover. Once again, the

findings derived from the non-linear Autoregressive Distributed Lag (ARDL) model demonstrate a statistically significant and positive association between the stock market and the economic growth of Bangladesh. In Molefhi's (2021) research, the Autoregressive Distributed Lag (ARDL) model was employed to examine the impact of macroeconomic indicators on the growth of stock and bond markets in Botswana. The findings suggest that in the near term, real output, money supply, and inflation positively impact the growth of the stock market, whereas the real exchange rate hinders its expansion.

Thus, the empirical evidence suggests that increased real output contributes to the long-term growth and stability of the stock market. In the context of the bond market, it is observed that the inflation rate and lending rate exert positive and negative influences, respectively, on the long-term performance of the bond market. In their study, Setiawan et al. (2021) examined the effects of financial market development on economic growth among middle-income and high-income countries of the Association of Southeast Asian Nations (ASEAN) and Central and Eastern European (CEE) countries. The analysis covers the period spanning from 2002 to 2019. The stock market development indicators were used to obtain annual time series data from the World Bank. The study utilised panel data analysis using a random effect model to examine the relationship between stock market development and economic growth. The study's findings demonstrate a favourable relationship between economic growth and market capitalization as well as total stock traded from the total value. On the contrary, there exists a negative correlation between the trading of domestic shares in the stock market and the increase of Gross Domestic Product (GDP). In order to cultivate enhanced economic growth, it is imperative for nations and authorities to prioritise the advancement of the financial market sector while concurrently upholding macroeconomic stability.

### III. Methodological Approach and Data

In order to examine the nexus between capital market and economic growth in Nigeria, the study used the Vector Error Correction Model (VECM) technique. This study adhered to procedures involved in time-series analysis ranging from unit root test, cointegration test to model estimation and post-estimation tests. These steps



and data issues are discussed in turn following model specification.

*Model Specification*

To ascertain the nexus between capital market and economic growth in Nigeria, this study adapts the model of Lawrence and Joy (2023) who utilised the VAR to analyse the capital market-economic growth nexus using mainly four

variables as indicators of the capital market. In their model, they specified GDP growth rate as a function of market capitalization (MCAP), stock market turnover ratio (SMTOR), all-share index (ASI), and financial deepening index (FINDEEP). This study therefore modified their model by including Gross Capital Formation which was not included in their model. The model is formulated as thus;

$$EGR = f(MCAP, ASI, FDP, GCF) \dots \dots \dots (3.1)$$

The model is transformed to a VECM model as specified below:

$$\begin{aligned} \Delta EGR_t &= \sigma + \sum_{i=1}^k \sigma_{11} \Delta EGR_{t-1} + \sum_{j=1}^k \sigma_{12} \Delta LMCAP_{t-i} + \sum_{l=1}^k \sigma_{13} \Delta LASI_{t-l} + \sum_{m=1}^k \sigma_{14} \Delta FDP_{t-i} + \sum_{m=1}^k \sigma_{15} \Delta GCF_{t-i} + \sigma_{18} ECM_{t-i} + U_1 \dots \dots \dots 3.2 \\ \Delta LMCAP_t &= \sigma + \sum_{i=1}^k \sigma_{21} \Delta EGR_{t-1} + \sum_{j=1}^k \sigma_{22} \Delta LMCAP_{t-i} + \sum_{l=1}^k \sigma_{23} \Delta LASI_{t-l} + \sum_{m=1}^k \sigma_{24} \Delta FDP_{t-i} + \sum_{m=1}^k \sigma_{25} \Delta GCF_{t-i} + \sigma_{28} ECM_{t-i} + U_2 \dots \dots \dots 3.3 \\ \Delta LASI_t &= \sigma + \sum_{i=1}^k \sigma_{31} \Delta EGR_{t-1} + \sum_{j=1}^k \sigma_{32} \Delta LMCAP_{t-i} + \sum_{l=1}^k \sigma_{33} \Delta LASI_{t-l} + \sum_{m=1}^k \sigma_{34} \Delta FDP_{t-i} + \sum_{m=1}^k \sigma_{35} \Delta GCF_{t-i} + \sigma_{38} ECM_{t-i} + U_3 \dots \dots \dots 3.4 \\ \Delta FDP_t &= \sigma + \sum_{i=1}^k \sigma_{41} \Delta EGR_{t-1} + \sum_{j=1}^k \sigma_{42} \Delta LMCAP_{t-i} + \sum_{l=1}^k \sigma_{43} \Delta LASI_{t-l} + \sum_{m=1}^k \sigma_{44} \Delta FDP_{t-i} + \sum_{m=1}^k \sigma_{45} \Delta GCF_{t-i} + \sigma_{48} ECM_{t-i} + U_4 \dots \dots \dots 3.5 \\ \Delta GCF_t &= \sigma + \sum_{i=1}^k \sigma_{51} \Delta EGR_{t-1} + \sum_{j=1}^k \sigma_{52} \Delta LMCAP_{t-i} + \sum_{l=1}^k \sigma_{53} \Delta LASI_{t-l} + \sum_{m=1}^k \sigma_{54} \Delta FDP_{t-i} + \sum_{m=1}^k \sigma_{55} \Delta GCF_{t-i} + \sigma_{58} ECM_{t-i} + U_5 \dots \dots \dots 3.6 \end{aligned}$$

Where:

EGR is Gross Domestic Product Growth Rate measured by year-on-year growth rate of real gross domestic product, LASI is a natural log of All Share Index of the Nigerian Stock Exchange, LMCAP is a natural log Market Capitalization which is measured by equities market capitalization of the Nigeria stock exchange, FDP is Financial Deepening measured by the ratio of broad money to nominal gross domestic product, while GCF is Gross Capital Formation which measure the entire value of investments made in an economy over a certain period, including capital expenditures on physical assets like machines, buildings, and infrastructure.  
μt - denotes stochastic disturbance term.

*Data Scope and Sources*

The present study employs annual data series to examine the nexus between capital market and economic growth, in Nigeria covering the period from 1982 to 2022. The data was collected from different sources. Specifically, data were extracted from the Central Bank of Nigeria (CBN) Statistical Bulletin, World Bank Development indicator, Nigeria Exchange Limited (NGX) Fact Book, Securities and Exchange Commission (SEC) market intelligence report as well as from the

official website of the CBN, SEC, the NGX and the National Bureau of Statistics (NBS).

*Estimation Techniques*

The study chooses VECM approach because it enables the investigation of dynamic interaction among endogenous variables in a stationary multivariate system without imposing a priori structural restrictions. It is a restricted VAR, which restricts long-run behaviour of the endogenous variables to converge to their co-integrating relationship and allows for short-run adjustment dynamics. If the variables are co-integrated, estimating the model using VAR would result in the loss of information on the long-run relationship as VAR in differences provides only information on short-run relationship between variables. The VECM model also allows test for the direction of causality.

**IV. Empirical Results and Discussion**

Here, the results of empirical analysis ranging from preliminary analysis (covering trend analysis, descriptive statistics, unit root test and cointegration test) to regression results are reported.

*Trend Analysis*



Graphically, the trend analysis shows that the variables fluctuate at one point or another during the review period. This was attributed to the effects

of Government policies that would have had attendant effects on some of the variables. These are presented graphically below:

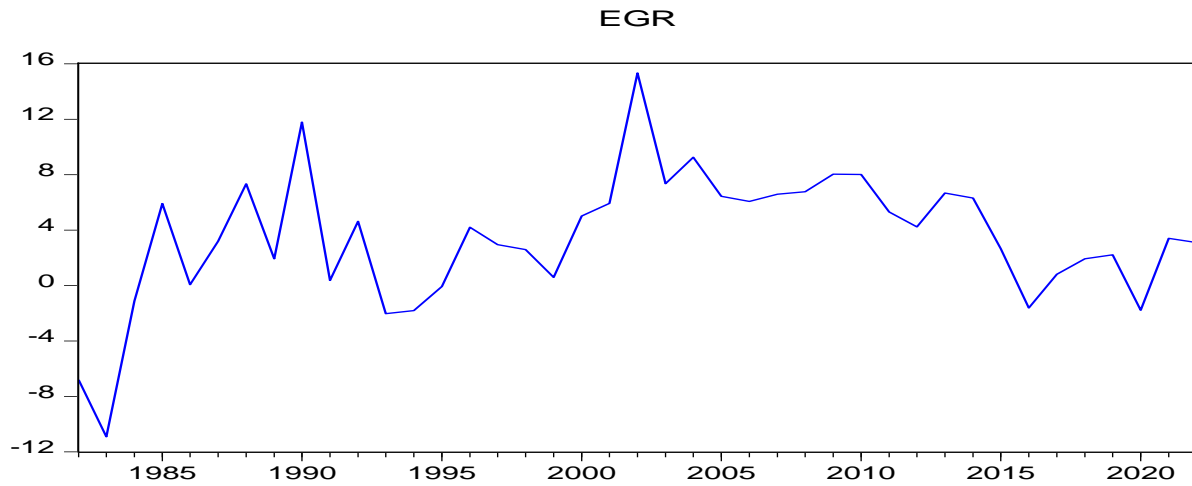


Figure 4.1: Trend of Economic Growth Rate.

The trend analysis of the Economic Growth Rate (EGR) is presented in Figure 4.1. It demonstrates that Nigeria's economic growth rate has exhibited a mixed tendency, with periods of both positive and negative growth since 1982. Understanding this tendency necessitates a consideration of the numerous elements that influenced Nigeria's economy at various points in time. Nigeria experienced negative growth in 1982. This can be ascribed to several factors, including the global economic slump at the time and a drop in oil prices, as Nigeria is significantly reliant on oil exports for revenue. Economic incompetence,

corruption, and political insecurity all affected the low growth. However, from 1992 to 2016, Nigeria's economic development fluctuated, with periods of both positive and negative rates. Several reasons impacted these changes. Nigeria's economic growth rate has been defined by a pattern of volatility between positive and negative growth since 2016. This pattern has been influenced by a number of reasons. The significant drop in oil prices in 2014 and 2015, along with the global economic recession, had a negative impact on Nigeria's economy.

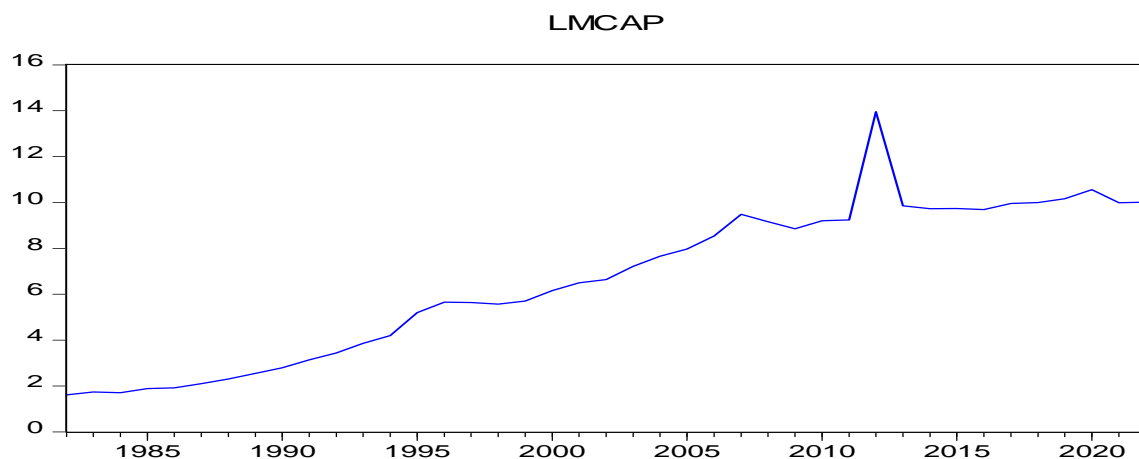


Figure 4.2: Trend of Market Capitalization.



Figure 4.2 is a visual analysis of market capitalization (LMCAP) exhibits an unstable or continuous fluctuating movement with drift over the years under study. Nigeria's market capitalization fluctuated steadily between 1982 and 1993. In terms of market valuation, this period is one of relative stability. Nigeria's market capitalisation began to rise significantly beginning in 1994. This increasing tendency lasted until 2009 when market valuation increased significantly. Several causes could have contributed to this growth, including good economic conditions, increasing investor confidence, and introducing

new investment opportunities. During this period, the Nigerian economy underwent advancements and changes, which most likely benefited the economy. In 2010, the market capitalisation hit its peak. This suggests that the Nigerian stock market reached its peak during this period. This high level could be attributable to a number of variables, including improved economic performance, increased international investment interest, and favourable opinion toward Nigerian companies. Following the peak in 2010, market capitalisation has remained consistent till 2022.

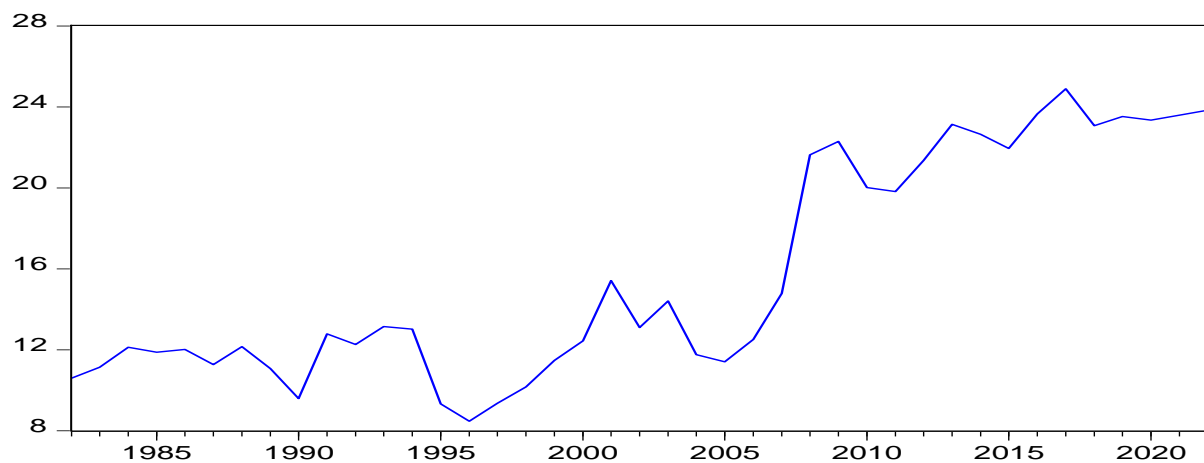


Figure 4.3: Financial deepening

Figure 4.3 illustrates the trend of financial deepening from 1982 to 2022. From 1982 through 1990, financial deepening grew steadily, fueled by economic expansion, deregulation, and technological advancements. However, it fell precipitously from 1991 to 1995 as a result of economic difficulties, tighter monetary regulations, and banking troubles. After 2000, there was a

recovery and rising trend in financial depth, spurred by economic recovery, financial reforms, globalization, and technological advances. These financial deepening fluctuations illustrate the long-term impact of economic conditions, regulatory changes, and global variables on a country's financial system



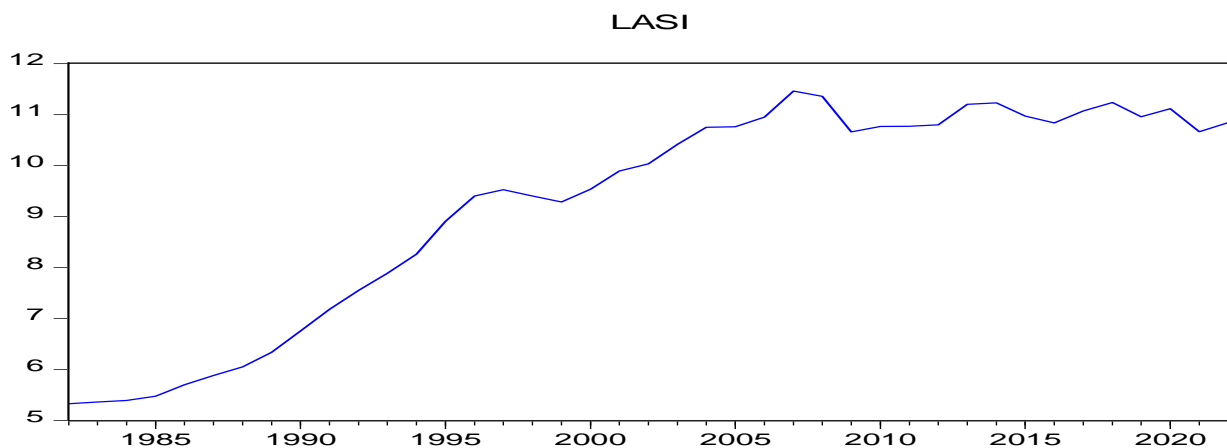


Figure 4.4: Trend of All Share Index.

Figure 4.4 displays the trend of All-Share Index in Nigeria from 1982 to 2022. The trend revealed that from 1982 to 2022, Nigeria's All-Share Index showed a constant and increasing trend, demonstrating growth in the country's stock market. Economic expansion, market reforms, and enhanced financial infrastructure were all variables that contributed. Nigeria's resource-rich economy and economic diversification drew both domestic

and international investment. Stock market involvement was also boosted by favourable global economic conditions and technical improvements. The index's consistent rise demonstrates Nigeria's stock market's durability and growth potential in the face of diverse domestic and foreign forces. Nonetheless, continuous efforts to improve rules and ensure economic stability are critical to maintaining this upward trend.

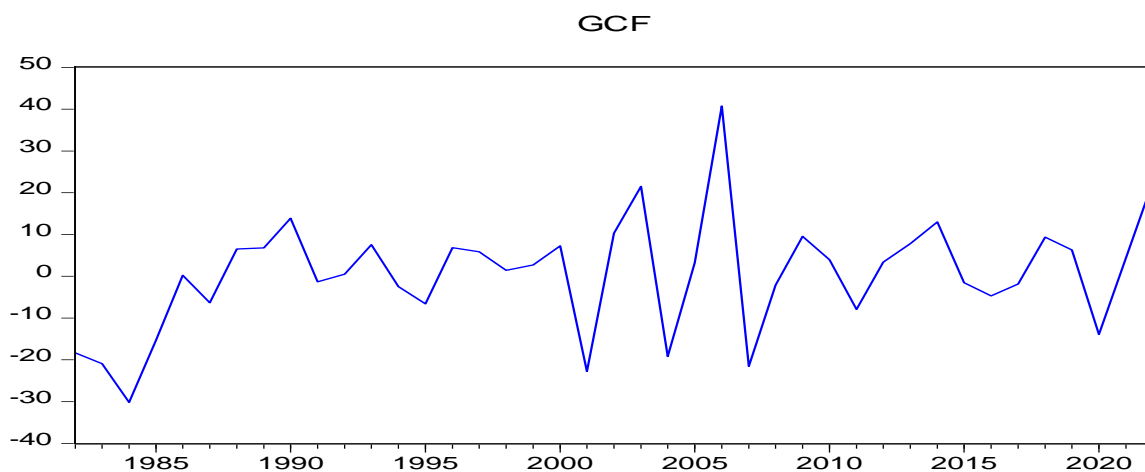


Figure 4.5: Gross Capital Formation.

Figure 4.5 shows the trend of gross capital formation from 1982 to 2022. The trend reveals that gross capital creation in Nigeria displayed a steady and continuous movement from 1982 to 1994, demonstrating ongoing investment in physical assets and infrastructure. This period of consistent expansion can be linked to various factors, including improved economic conditions, greater corporate confidence, and government

attempts to encourage investment. However, the trend has been more unpredictable after 1995, with swings in gross capital formation. This heightened volatility could be attributed to several factors. Economic uncertainty caused by shifting global economic conditions and geopolitical events may have resulted in erratic investment decisions as businesses responded to shifting market dynamics.



Descriptive Analysis

Table 4.1: Descriptive Statistics.

	EGR	FDP	GCF	LASI	LMCAP
Mean	3.446250	15.56339	-0.089537	9.192028	6.550279
Median	3.925000	12.89917	2.064454	9.962627	6.567883
Maximum	15.33000	24.89526	40.74386	11.45926	13.95321
Minimum	-10.92000	8.464230	-30.18459	5.326905	1.609438
Std. Dev.	4.782649	5.385285	13.26961	2.135008	3.321335
Skewness	-0.453140	0.510335	0.120868	-0.714388	-0.019637
Kurtosis	4.297308	1.591157	4.191387	1.965690	1.904783
Jarque-Bera	4.173918	5.044343	2.463066	5.185334	2.001737
Probability	0.124064	0.080285	0.291845	0.074820	0.367560
Sum	137.8500	622.5354	-3.581480	367.6811	262.0111
Sum Sq. Dev.	892.0755	1131.050	6867.222	177.7720	430.2193
Observations	41	41	41	41	41

Source: Author's Computation using E-Views 11.0, 2023

Table 4.1 presents the descriptive statistics of EGR, FDP, GCF, LASI and LMCAP. The total number of observations for each of the six variables is 41. FDP assumes the highest average value, followed by LASI, LMCAP, EGR, and GCF respectively. Considering the normality status of individual variable's data in the distribution, the Jarque-Bera tests show that all the variables of

interest are normally distributed given that the probability of Jarque -Bera tests for each of these variables are significant at 5% i.e. greater than 0.05. Similarly, in line with Jarque-Bera test's results, Kurtosis results also suggest that EGR and GCF are not mesokurtic given that the Kurtosis values of 4.297308 and 4.191387 are greater than three (3).

The Unit Root Test Result

Table 4.2: Unit Root Stationarity Result.

Variables	ADF Calculated Value at First Diff.	Critical Values			I(d)
		1%	5%	10%	
EGR	-9.936198	-3.615588	-2.941145	-2.609066	I(1)
FDP	-5.719348	-3.615588	-2.941145	-2.609066	I(1)
GCF	-6.185679	-3.626784	-2.945842	-2.611531	I(1)
LASI	-4.106528	-3.615588	-2.941145	-2.609066	I(1)
LMCAP	-9.553346	-3.615588	-2.941145	-2.609066	I(1)

Source: Author's Computation using E-Views 11.0, 2023

The summary of the Unit Root test using the Augmented Dickey-Fuller Test in Table 4.2 shows that all variables are stationary at first difference compared to the 1%, 5% and 10% levels of significance. This satisfies the requirements for using either VECM or VAR as the method of data analysis, depending on the result of our Johansen cointegration test. Having successfully tested for stationarity at the first difference, a cointegration test was conducted to examine the long-run relationship among the variables under study.

Co-Integration Test

Table 4.3: Unrestricted Cointegration Rank Test (Trace).

Hypothesised	Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value
None *	0.780865	185.9291	125.6154
At most 1 *	0.739439	128.2425	95.75366
At most 2 *	0.514619	77.13570	69.81889
At most 3 *	0.453142	49.66851	47.85613
			Prob.**
			0.0000
			0.0001
			0.0116
			0.0334



At most 4	0.310045	26.73304	29.79707	0.1083
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's computation using E-Views Software, Version 11 (2023)

Table 4.4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue).

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.780865	57.68658	46.23142	0.0021
At most 1 *	0.739439	51.10683	40.07757	0.0020
At most 2	0.514619	27.46718	33.87687	0.2392
At most 3	0.453142	22.93548	27.58434	0.1763
At most 4	0.310045	14.10289	21.13162	0.3566
Max-eigenvalue test indicates 2 cointegrating eqn (s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's computation using E-Views Software, Version 11 (2023)

Tables 4.3 and 4.4 show the cointegration test result for the variables in the study. The variables converge in the long run, depicting a long-run relationship among them. The long-run relationship exists at a 5% significance level according to the Trace test statistics and the Eigenvalue. The Trace statistic result reveals four co-integrating equations, while Eigenvalue reveals two cointegrating equations. Hence the rejection of the null hypothesis of no cointegration and our justification for using VECM. Therefore, it can be

concluded that there is a long-run relationship among the variables.

*Vector Error Correction Estimates (Long-run Analysis)*

From the Johansen Multivariate Cointegration technique, the normalized cointegrating equation shows the long-run relationship between real EGR and capital market variables. The table below contains the coefficients of the first normalized cointegrating equation.

Table 4.6: VECM Long-run Analysis.

Cointegrating Eq:	CointEq1
EGR(-1)	1.000000
FDP(-1)	1.624220
	(0.89066)
	[ 1.82362]
GCF(-1)	2.537533
	(0.26428)
	[ 9.60165]
LASI(-1)	22.29938
	(6.92740)
	[ 3.21901]
LMCAP(-1)	13.53133



	(4.00408)
	[ 3.37938]
C	-265.0335

Source: Author's Computation using E-Views 11.0, 2023

Note: Standard errors in ( ) & t-statistics in [ ]

#### VECM Short-run Analysis

Having met the two conditions (i.e., all the variables of interest are integrated of the same order (1) and found to be cointegrated) for estimating VECM, the study, therefore, estimates the Vector Error Correction Model as presented in Table 4.7

Table 4.7: Parsimonious Error Correction Estimates/Short Run Dynamics.

Dependent variable: D(EGR)				
Variables	Coefficients	Std. Error	T. Stats.	Prob.
C	-0.332864	0.74838	-0.44478]	0.6570
D(EGR(-1))	-0.301608	0.16304	-1.84991	0.0658*
D(FDP(-1))	0.730163	0.38284	1.90725	0.0579*
D(GCF (-1))	0.065183	0.06032	1.08058	0.2812
D(LASI(-1))	7.192002	3.98144	1.80638	0.0723*
D(LMCAP(-1))	1.539035	0.70275	2.19002	0.0297**
ECM(-1)	-0.072577	0.03381	-2.14688	0.0330**
STATISTICAL TESTS				
R-squared	0.520317			
Adj. R-squared	0.387990			
Sum sq. resids	399.5783			
S.E. equation	3.711949			
F-statistic	3.932070			
Log likelihood	-98.62331			
Akaike AIC	5.664385			
Schwarz SC	6.052234			
Mean dependent	0.383421			
S.D. dependent	4.744853			

Note: \*, and \*\* imply test critical values of 1% and 5%, respectively

Source: Author's Computation using E-Views 11.0, 2023

#### V. Discussion of Results

Tables 4.6 and 4.7 present both short-run and long-run results of vector error correction model (VECM) estimates of the impact of the capital market on economic growth in Nigeria. Based on the estimation of the impact of the capital market on the economic growth rate in Nigeria, the results indicate that all the independent variables have a positive impact on economic growth except listed securities which has a negative impact on economic growth. The result of each variable is discussed below.

The analysis found that the All-Share Index exhibited a positive correlation with economic growth, indicating a significant impact

throughout the period analysed. This finding suggests that a robust stock market can positively impact a nation's economic growth, as evidenced by the all-share index. This observation is consistent with the findings reported by Omankhanlen et al. (2022), and Adamu and Mustapha (2023), as well as other studies examined, which have demonstrated a positive relationship between the All-Share Index and economic growth. This discovery, however, contradicts the conclusions of Lawrence and Joy (2023) and Ighoroje and Eloho (2022) as well as other evaluated studies, which concluded that the All-Share Index has a negative effect on economic growth.

Similarly, the analysis yielded results



indicating that Market Capitalization exerts a positive and statistically significant influence on the economic growth of Nigeria. This observation suggests that a greater market capitalization corresponds to a larger stock market, hence potentially attracting increased investment and offering expanded avenues for corporate financing. This discovery is consistent with the findings reported by Ogamegbunam (2022), Umar (2022b), Omimakinde and Otite (2022), Lawrence and Joy (2023) and Adamu and Mustapha (2023), along with other researchers, have conducted studies that examined the relationship between market capitalization and economic growth. These studies consistently found evidence supporting a positive impact of market capitalization on economic growth. This discovery, however, contradicts the conclusions drawn by Adeshina-Uthman (2020) and Bello et al. (2022), as well as other examined studies, which indicated that market capitalization has a negative effect on economic growth.

Gross Capital Formation positively and significantly impacts economic growth during the period under study. In the long run, the positive and significant impact of gross capital formation on economic growth indicates that increasing investment in physical assets, such as machinery, infrastructure, and technology, contributes positively to economic growth. Lastly, the result revealed that Financial Deepening has a positive and significant impact on economic growth in the short and long run. In the long run, the positive and significant impact of financial deepening on economic growth suggests that as the financial sector becomes more developed and sophisticated, it contributes positively to economic growth.

## VI. Conclusion and Recommendations

This study examined the nexus between impact of capital market and economic growth in Nigeria from 1982 to 2022. This study has highlighted the importance of capital market in driving economic growth in Nigeria. The positive impact of market capitalization, value of transaction, financial deepening, and gross capital formation underscores the need for policies that enhance financial inclusion, investor protection, and investment incentives. Addressing the short-term focus on transactions and promoting a balanced investment landscape can further support sustainable economic growth. These findings conclude that a well-functioning and vibrant capital

market can play a crucial role in promoting economic growth by attracting investments, providing financing opportunities for businesses, and facilitating capital formation. By incorporating the study's recommendations and conducting further research, Nigeria can strengthen its economic foundations and pave the way for long-term, inclusive, and sustainable economic growth.

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