Capital Market and Economic Growth in Nigeria

Abstract
In spite of its expected role of bridging the saving and investment gap for economic growth, the impact of the Nigerian capital market on the growth of the economy remains unclear.This study looked at the influence of the capital market on economic growth in Nigeria between 1981 and 2022, using vector autoregressive (VAR) analysis.The variables used included: real gross domestic product (RGDP), market capitalization (MCAP), total value of securities traded (TVST), and gross fixed capital formation (GFCF). The study concluded that while RGDP and MCAP influenced their own outcome as well as the outcome of other variables positively in both the short and long run, TVST and GFCF influenced their own outcome as well as the outcome of other variables negatively in both the short and long run, using the VAR system tools of impulse response function and forecast error variance decomposition. Based on the findings of this study, we recommended among others the urgent need to boost the perception of local firms listed in the Nigerian stock exchange both locally and internationally in terms of the total value of their corporate assets and performance measured by price-to-earnings, price-to-sales and return-on-equity metrics. This can be improved upon when these firms are able to increase the quality of their products and services thereby making them better competitors in the global space.

Keywords: *capital market, economic growth, impulse response function, variance decomposition, VAR*

1. Introduction

Economic growth is contingent on productive investment and the financing of such productive activities can be obtained through two channels: via capital markets or banks. If these channels are themselves feeble, then they disconnect the intermediation process and thus impede economic growth. The capital market is a network of institutions, persons, and tools that interact in a process that pools medium and long-term money from surplus sectors of the economy and distributes them to productive sectors of the economy through intermediaries, all within a regulated framework. It is the method through which economic units seeking to invest surplus cash engage with those seeking funding for their businesses, either directly or through financial intermediaries. Economic growth, on the other hand, refers to a country's real gross national product and per capita real gross national product increasing over time. It is the rise in a country's productive capacity through time as evidenced by increases in output of products and services as well as national revenue. Capital accumulation, technical advancement, and growth in the percentage of labor force to total population are among the primary factors of a country's economic growth, according to Obstfeld (1994). It is critical to note that economic theory has long established connections between capital accumulation and economic development, technical advancement and economic growth, and labor force proportion to total population and economic

growth (Goldsmith, 1969; Deveraux and smith, 1994; and Dermirguc-Kunt and Levine, 1996). The ability to accumulate and mobilize capital for growth varies per country, but it is primarily dependent on domestic savings and foreign capital inflows.

The capital market's functioning as an institution for transferring money from surplus to deficit units is being evaluated in light of the above. Without a doubt, the Nigerian capital market should act as a conduit for the mobilization of long-term private and public savings, as well as the investment of these assets. Regulators and financial professionals feel the Nigerian capital market is shallow due to its modest size. The ratio of marketable securities to total listed securities outstanding is used to calculate this.

The market has failed to give investors with a diverse range of investment alternatives, improved risk-mitigation tools, and a more transparent environment throughout time. This pervasiveness has hindered the market's capacity to allocate resources efficiently to productive sectors in order to support economic growth and development. In light of the foregoing, this study evaluates the efficiency of capital market activities in boosting Nigerian economic growth. To put it another way, the main goal of this research is to find out how Nigeria's capital market affects the country's economic growth. As a result, the following are the paper's research hypotheses: I'll do it. The creation of gross fixed capital has no impact on Nigeria's economic growth; the number of shares traded has no bearing on Nigeria's economic growth; and the formation of market capitalization has no bearing on Nigeria's economic growth. The research was conducted between 1981 and 2022. This time frame was chosen to allow for a quick assessment of the pre-structural adjustment program period as well as the impact of the structural adjustment program on the Nigerian capital market. Furthermore, the study's time span is believed to be lengthy enough to assure that the time series data is normal, as required by the traditional least square analysis method. The following is the outline for the paper. Section 2 follows the introduction with a quick description of the empirical study. Section 3 explains how to go about it. In part 4, the study's empirical findings were presented, and in section 5, the study's conclusion and suggestions were explored.

2. Review of Empirical Literature

Several studies have sought to assess the influence of capital markets on economic growth in both developed and developing nations throughout the years. This section is focused with prior relevant research and their conclusions in order to provide insight into the literature gap and contribute to it. Sabariah and Norhafiza (2016) investigated the impact of stock and debt markets on the Malaysian economy's performance. The long run result of the vector error correction model, which included variables such as per capita real GDP, stock capitalization, and debt market instrument, revealed that while both stock capitalization and debt market instrument had a significant positive impact on the Malaysian economy, the impact of stock capitalization was greater than that of the debt market. Furthermore, stock capitalization had a one-way causal

impact, but the debt market was unable to establish a causal link. As a result, the research advised that the capital market's liquidity be improved, as it has an impact on an investor's financial and investment decisions.

Khetsi and Mongale (2015) carried out a historical study to determine the effect of capital market on the South African economy between 1971 and 2013. The study used employed Johansen, cointegration, granger causality and vector error correction model to analyze the data. Their results revealed that capital market impacted positively on the growth of the South African economy.

The purpose of the research by Ake and Dehuan (2010), who carried out their investigation across countries, was to investigate how the stock market affects economic growth. Financial metrics like market cap, total trade value, turnover ratio, FDI, and GDP were all included of the analysis. Five European nations' quarterly time series data were utilised: The United Kingdom, Portugal, Belgium, France, and the Netherlands. Causal connections were investigated for each country. According to the data, in a couple of countries where the stock market was liquid and active, stock market impacted positively on economic growth. However, in countries with low liquidity in stock market, the causality relationship is refuted.

In Ghana, Acquah-Sam and Salami assessed the impact of capital market development on economic growth using quarterly data from 1991Q1 to 2011Q2. A set of techniques were employed to analyze the data which included ordinary least squares, Layered Regression Analysis for path analysis and Structural Equation Modeling. The findings demonstrated a reciprocal relationship between expanding economies and developing capital markets. However, growth in the economy was more affected by capital market growth.

Okpoto compared domestic and international research on the effect of the capital market on GDP development in Nigeria from 1980 to 2013 in his 2015 paper. The study evaluated capital market characteristics including market capitalization, total holdings of development stock, and total value of transactions using the Error Correction Mechanism (ECM). As a measure of economic growth, GDP was used. According to the results, total transaction value improved economic growth in Nigeria, however market capitalization and holding development stock had a negative effect.

Echekoba, Ezu, and Egbunike (2013) investigated the influence of capital market on the growth of the Nigerian economy under democratic government in order to confirm the widespread belief that democracy fosters a business-friendly environment. The data was analyzed using time series data and the multivariate regression technique. The findings indicated that while total market capitalization and all stock indices have a favorable impact on GDP growth, total stock value has a negative impact on GDP growth, and none of the variables are significant. As a result, the research concluded that the government should make a coordinated effort and demonstrate sincerity of intent in the development of capital markets.

Ologunwa and Sadibo (2016) used aggregate data to investigate the empirical link between capital market development and economic growth in Nigeria. They employed a structural dynamic model in their research. The researchers discovered that both the capital market ratio and the turnover ratio are essential and beneficial drivers of economic development, and that stock markets impact economic growth through mobilizing savings. The research recommended that the Nigerian stock market be developed in order to attract and protect foreign capital inflows, as well as smart capital management by investors to hedge against economic shocks.

From 1985 to 2012, Yadirichukwu and Chigbu (2014) examined the influence of the capital market on Nigerian economic development. The data analysis approach used in the study was multivariate regression analysis, which was combined with an error correction model (ECM). The findings indicated that GDP and market capitalization have a long-run negative connection. In the long run, the link between new issues and GDP was favorable. The long-term link between total stock market listing and GDP, on the other hand, was inversely connected to GDP. In addition, it was discovered that the value of stock market transactions and GDP had an inverse connection. The research advised that market efficiency and transparency be improved in order to boost investor trust.

Owusu (2016) investigated the relationship between Nigeria's stock market and long-term economic development using an ARDL method of bound test for cointegration between 1987 and 2014. The author evaluated the nexus using the combined stock market indicators index. The findings of the study indicated a mixed bag of consequences. Over time, the composite stock market indicators index, in particular, has both a negative and uncertain influence on economic development.

Odo, Anoke, Onyeisi, and Chukwu (2017) evaluated the link between Nigeria's capital market and economic advancement from 1986 to 2016. Granger causality test and autoregressive distributed lag (ARDL) approaches were utilised to estimate the model. The results demonstrated that the ratio of market capitalization to GDP had large positive influence on economic growth in the short run while total value of shares traded as a ratio GDP had small negative impact on the economy in the short run. On the other hand, the ratios of both market capitalization and total value of shares traded to GDP had minimal negative influence on economic growth in the long term

Using yearly time series data and ordinary least squares regression analysis, Amu, Nwezeaku, and Akujuobi (2015) examined the connection between capital market expansion and economic performance in Nigeria from 1981 to 2012. The capital market indicators had a mixed result, according to the findings. Specifically, whereas other market indicators had a significant positive impact on Nigerian economic growth, the rise in market capitalization had a minor impact. According to the research, capital market regulatory authorities should implement policies that promote Nigeria's capital market's growth and development.

Brown and Nyeche (2016) studied the stock market's contributions to the Nigerian economy in their research. Capital market indicators included market capitalization, total value of stock traded, inflation rate, and trade openness, while GDP was employed as a proxy for economic growth (GDP). Ordinary least squares (OLS) techniques were used to perform multiple regression and co-integration tests. While market size, total value of stock traded, and trade openness all had a positive impact on economic growth in Nigeria, the inflation rate had a negative impact, according to the research. Based on the findings, the research recommends that the government execute the changes already in place, which would help to enhance market activity.

Sulaman, Adejayan, and Ilori (2023) conducted an assessment of the influence of capital market development on the economic growth of the Economic Community of West African countries (ECOWAS) during the period spanning from 1980 to 2019, utilizing annual data. Employing the panel autoregressive distributed lag (PARDL) technique, the study undertook an analysis of the model. The findings indicated that gross capital formation (GCF) and foreign direct investment (FDI) significantly contributed to the economic growth of Anglophone nations, whereas solely gross capital formation exhibited a significant impact on the growth of Francophone economies.

Abere, Daramola, Ogunsanwo, and Adebayo (2021) scrutinized the interconnection between capital market development and economic growth in Nigeria throughout the period spanning from 1986 to 2020. Utilizing Johansen cointegration and error correction mechanism techniques, the authors analyzed the model with the number of deals and turnover ratio as regressors, while real gross domestic product (GDP) served as the dependent variable. The findings revealed that both the number of deals and turnover ratio exerted a positive and statistically significant effect on economic growth in Nigeria. These results suggest that capital market development plays a stimulating role in fostering economic growth within the Nigerian context.

Olusegun and Ajao (2024) investigated the relationship between the capital market and economic growth during the timeframe from 2003 to 2022. Employing the ordinary least squares technique, the authors analyzed a model in which market capitalization served as a proxy for capital market development, alongside interest rates, while real GDP served as the dependent variable. The results indicate a positive and statistically significant relationship between stock market development and economic growth, albeit with a relatively modest degree of influence.

3. Methodology

The vector autoregressive (VAR) method of estimation was utilized in this study, which was analyzed using econometric simulations. Sims (1980) created the VAR model in response to the interrelationships between non-stationary time series variables, considering them all as endogenous. According to Sims (1980), if variables are really simultaneous, they should be handled equally; there should be no differentiation in priority between endogenous and exogenous variables. Sims (1980) suggested that VAR model research need not be connected

with a rigorous theoretical framework. The VAR model has allowed academics to analyze both the relative importance and the dynamic impacts of numerous shocks on macroeconomic variables, in addition to providing credible forecasts.

Consequently, Capital market indicators included in our VAR model were market capitalization, total value of stock tradedand gross fixed capital formation, while real GDP was used as a proxy for economic growth. Ordinary least squares (OLS) techniques were used to carry out multiple regression and co-integration tests. The Impulse-response functions indicates the susceptibility of dependent variables in a VAR model to shocks from other variables. It depicts the effects of shocks on the variables' adjustment paths. As a result, each variable's erroneous term in each equation receives a unit shock, and the VAR system's effects are tracked over time (Brooks, 2002). Variance Decomposition.

This method is used to illustrate the numerical effects of shocks on variables. The variance decomposition indicates how much of a given variable's expected error variance may be explained by the shocks witnessed in each independent variable s = l, 2,.... In fact, it appears that the shocks shown in the series account for a large percentage of the expected error variance. On the other hand, the variance decomposition illustrates how much information each variable offers to the other variables in the autoregression. It analyses how much of each variable's prediction error variance may be explained by external shocks to the other variables.

A four-variable VAR mode was utilized in this study. The data were derived from the Nigerian Central Bank's (CBN) statistics bulletin for 2022. The data were annual and spanned through the years 1981 to 2022. The VAR model is presented as follows:

$$Yt = \beta + \sum_{i=1}^{k} \binom{k}{i=1} A_i Y_{t-1} + \mu_t$$

Where,
Y_t = (RGDP, MCAP, TVST, GFCF), the vector of all variables.
β = constant of autonomous variables
A_i = matrix of coefficients of all the variables in the model.
Y_{t-1} = vector of the lagged variables
μ_t = vector of the stochastic error terms

RGDP is used in the VAR model above to measure real changes in Nigeria's output of goods and services. It's a proxy for economic growth that ignores the impact of inflation. The MCAP is calculated by multiplying the number of outstanding shares of listed firms by their respective closing prices. The product of the number of all existing shares and the closing price of the shares determines a company's market capitalization on a given day. The number of outstanding shares relates to the stock's issuance size. The formula MC = NP is used to calculate market capitalization, with MC denoting market capitalization, N denoting the number of outstanding shares, and P denoting the closing price of shares. It's essentially a single statistic for assessing a

company's assets. The TVST is similar to the MCAP in that it employs a multiple of values or measures assigned to firms by investors, such as price-to-earnings, price-to-sales, and return-on-equity. The GFCF calculates the net capital accumulation or additions of fixed capital goods such as equipment, tools, electricity, and other items by all productive companies in Nigeria on a yearly basis, as estimated by the central bank of Nigeria. All of the variables were calculated in monetary terms, namely in Nigerian Naira billions.

4. Empirical Results

4.1 Unit Root Test Result

We used the Augmented Dickey Fuller (ADF) unit root test to confirm that the time series data were stationary in order to prevent providing erroneous estimated findings. The results of the variable tests revealed that all of the time series exhibited unit root problems at different levels. This suggests that the series' means and variances are not consistent over time, and that there is no trending behavior, which might lead to erroneous regression findings. However, once the time series data were differenced once, the problem was solved, suggesting that the variables became stationary after the first difference, as shown in table 1 below.

Table 1 Result of the ADF unit root test

Variables	Levels		First Difference		Order of integration
	ADF Stat	Probability	ADF Stat	Probability	
LNRGDP	-0.027817	0.9497	-3.395063	0.0177**	I(1)
LNMCAP	-0.595008	0.8597	-4.606412	0.0007***	I(1)
LNTVST	-0.483532	0.8833	-5.624756	0.0000***	I(1)
LNGFCF	0.731704	0.9913	-4.787605	0.0005***	I(1)
5% Critical Value = -2.945842					

Source: Authors' computation using E-views 10

4.2 The Vector Autoregressive (VAR) Model

We built the VAR model to estimate the extent to which the capital market influences economic growth in Nigeria after we solved the unit root problem in the time series. The information criterion provided by Schwarz (SC) and Hannan-Quinn (HQ) statistics of 1 and 2 lag orders lead us to the lag order indicated by the information criteria. In this work, the VAR used the impulse response function and error variance decomposition to examine the capital market and economic growth nexus.

4.2.1 Impulse Response Function

The capital market and economic growth nexus in Nigeria is assessed using the impulse response function. This procedure followed the course of a perturbation in one VAR invention that

triggers a chain reaction in all variables through time, until the variables return to equilibrium (Green, 2000).

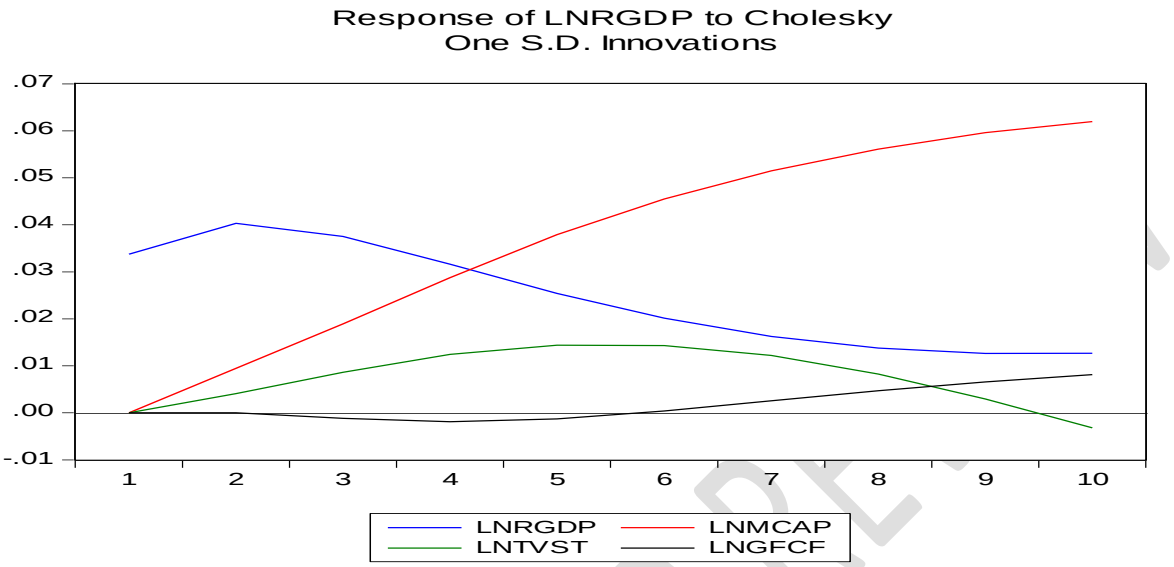

Figure 1: Combined Impulse Response Function of LNRGDP to Cholesky One Standard Deviation Innovation
Source: Authors' computation using E-views 10.

From figure 1 a one standard deviation (SD) positive shock to real gross domestic product (RGDP) will first lead to its own rise by 0.8% from about 3.4% in the 1st year to about 4.2% in the 2nd year, thereafter RGDP will drop by 0.5% in the 4th year and will slowly slope downwards until the 8th year at about 1.5% where it will stabilize and remain positive up to the 10th year. The response of LNRGDP to a one SD positive shock to LNMCAP will increase LNRGDP from zero% in the first year by 1% into the second year. LNRGDP will successively increase by 1% year in year up to the 5th year where it will rise to 4%. Thereafter, LNRGDP will continue to rise slowly and peak at 6% in the 10th year. In the case of a one SD positive shock to LNTVST, LNRGDP will rise gradually from zero in the 1st year to 1.5% in the 6th year before gradually slowing down to zero again in 9th year and 6th month period. A one SD positive shock to LNGFCF will leave LNRGDP between zero and infinitesimal negative value up to the 6th year before rising gradually by 1% in the 10th year. This implies that it will take gross fixed capital formation 6 years to influence increase in RGDP and will thereafter cause it to rise by only 1% in the 10th year.

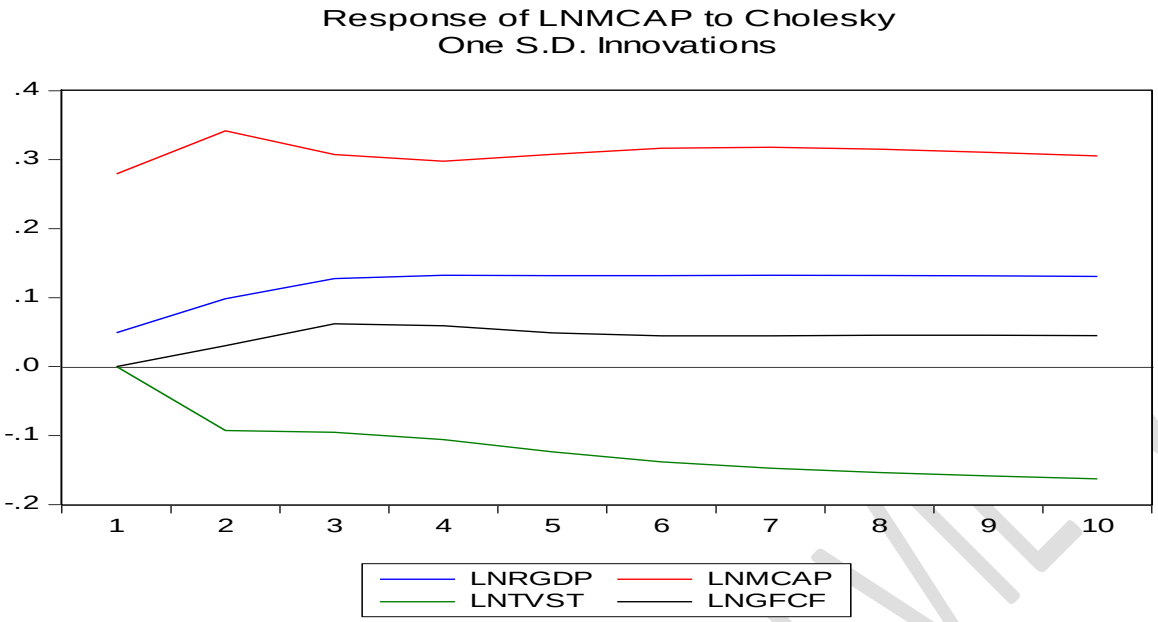

Figure 2: Combined Impulse Response Function of LNMCAP to Cholesky One Standard Deviation Innovation
Source: Authors' computation using E-views 10.

Figure 2 shows higher percentages of the variables compared to the earlier figure. A one SD positive shock to LNRGDP will increase LNMCAP from 5% in the 1st year to 10% in the 2nd year and a further rise to 15% in the 3rd year and then maintaining that level and value all through to the 10th year. A one SD positive shock to LNMCAP will lead to a rise in its own value from 28% in the 1st year to 35% in the 2nd year and then it will drop to 30% in the 3rd year and thereafter maintain a relatively flat level at 30% up to the 10th year. A one SD positive shock to LNTVST will lead to a decrease in LNMCAP from zero in the 1st year to -10% in the 2nd year and increasingly remaining negative up to -18% in the 10th year. A one SD positive shock to LNGFCF will gradually increase LNMCAP from zero in the 1st year to 5% in the 3rd year and then will relatively remain flat up to the 10th year.

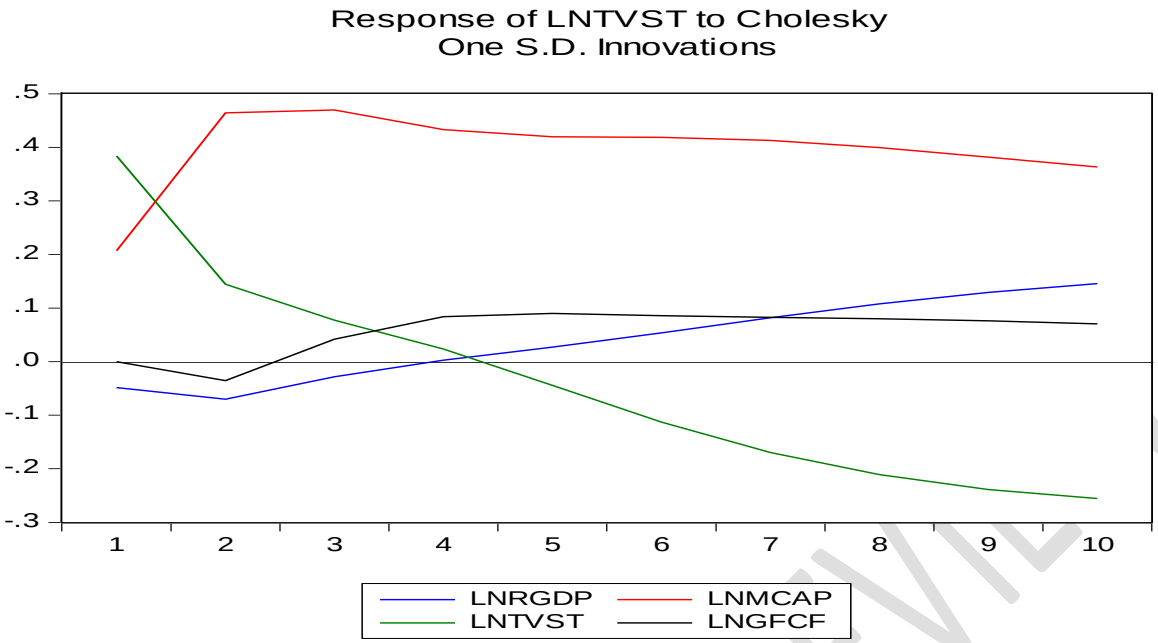

Figure 3: Combined Impulse Response Function of LNTVST to Cholesky One Standard Deviation Innovation
Source: Authors' computation using E-views 10.

From Figure 3, a one SD positive shock to LNRGDP will lead to a further decrease in LNTVST below the zero level from -3% in the 1st year to -7% in the 2nd year and will then rise up to zero in the 4th year and thereafter maintain upward increase up to12% in the 10th year. A one SD positive shock to LNMCAP will lead to a sharp rise in LNTVST from 20% in the 1st year to 48% in the 2nd year and it will maintain that level up to the 3rd year before gradually dropping to 35% in the 10th year. A one SD positive shock to LNTVST will nosedive in its own value from 40% in the 1st year to 14% in the 2nd year and further decline to zero in the 4th year 4th month before increasingly remaining negative throughout the period. A one SD positive shock to LNGFCF will first lead to a decline in LNTVST from zero to -2% but will gradually rise to 10% in the 4th year and then remaining relatively stable up to the 10th year.

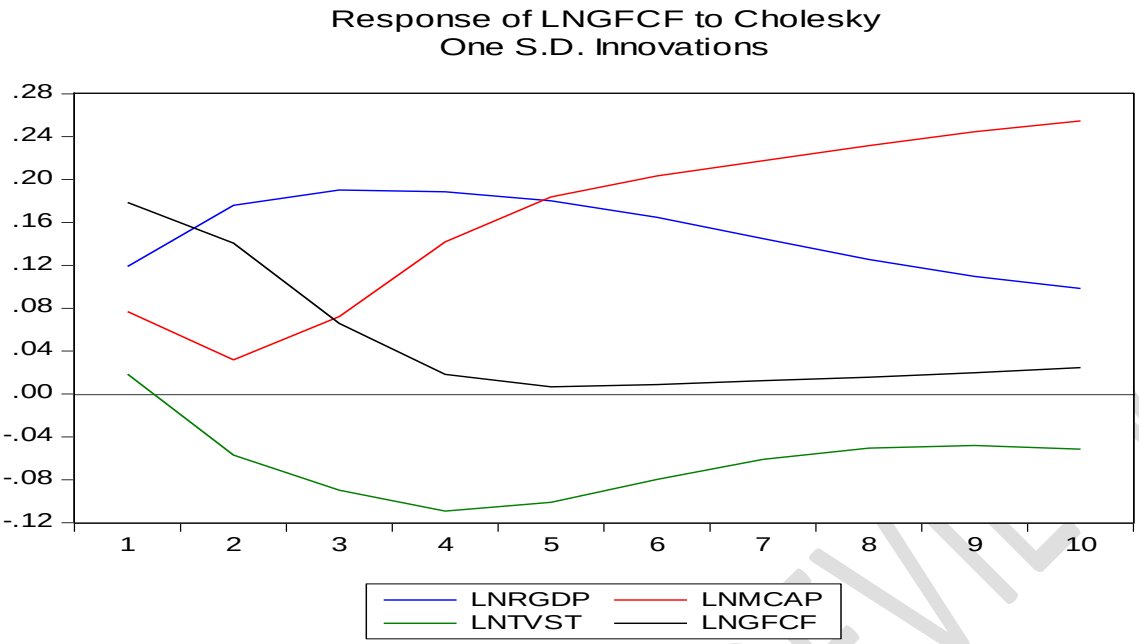

Figure 4: Combined Impulse Response Function of LNGFCF to Cholesky One Standard Deviation Innovation
Source: Authors' computation using E-views 10.

According to figure 4, a one-SD positive shock to LNRGDP will result in a 12 percent rise in LNGFCF. From 17% in the first year to 17% in the second, 18% in the third, and ultimately 8% in the tenth year. In the event of a one SD positive shock to LNMCAP, LNGFCF will first decline from 8% in the first year to 3% in the second year. The time it takes to raise funds in the capital market and invest in fixed assets might be to blame for this decline. After that, LNMCAP will progressively increase from 3% in the second year to 7% in the third year, then to 14% and 16% in the fourth and fifth years, respectively, before gradually increasing to 26% in the tenth year. A one SD positive shock to LNTVST will cause LNGFCF to fall from 2% in the first year to -5% in the second year, and remain negative until the tenth year. Finally, a one SD positive shock to LNGFCF will cause a steady drop in its own value, from 18 percent in the first year to 14 percent in the second year and 4 percent in the third year, before becoming asymptotic in the tenth year.

4.2.2 The Error Variance Decomposition

The error variance decomposition obtained from the VAR system is presented in table 2 below

Table 2 Variance Decomposition of Variables

Variance Decomposition of LNRGDP					
Period	S.E.	LNRGDP	LNMCAP	LNTVST	LNGFCF

1	0.033762	100.0000	0.000000	0.000000	0.000000
2	0.053592	96.31013	3.111764	0.578105	7.87E-07
3	0.068658	88.54067	9.493285	1.937075	0.028966
4	0.081836	77.23404	19.02158	3.670825	0.073560
5	0.094808	64.72848	30.16298	5.034970	0.073571
6	0.108028	53.33616	40.97157	5.634182	0.058096
7	0.121407	44.01829	50.41863	5.472130	0.090947
8	0.134791	36.75273	58.23671	4.814897	0.195658
9	0.148091	31.17493	64.43749	4.028086	0.359490
10	0.161269	26.90333	69.10463	3.435768	0.556274

Variance Decomposition of LNMCAP

Period	S.E.	LNRGDP	LNMCAP	LNTVST	LNGFCF
1	0.283809	3.018875	96.98112	0.000000	0.000000
2	0.465323	5.598404	90.01312	3.959112	0.429368
3	0.583319	8.348482	85.07203	5.176771	1.402719
4	0.679023	9.968680	81.99387	6.242744	1.794701
5	0.768604	10.72168	80.02199	7.450823	1.805507
6	0.854086	11.06993	78.55162	8.644524	1.733923
7	0.933761	11.27231	77.33041	9.717726	1.679548
8	1.007158	11.41350	76.26524	10.67383	1.647432
9	1.074904	11.51864	75.31069	11.54531	1.625359
10	1.137718	11.60365	74.43636	12.35302	1.606977

Variance Decomposition of LNTVST

Period	S.E.	LNRGDP	LNMCAP	LNTVST	LNGFCF
1	0.438780	1.215857	22.20684	76.57730	0.000000
2	0.659735	1.668487	59.37188	38.67213	0.287499
3	0.815007	1.214066	72.09285	26.24257	0.450513
4	0.927094	0.938936	77.54989	20.34450	1.166680
5	1.022918	0.840542	80.53117	16.89856	1.729725
6	1.115619	0.936702	81.78544	15.23434	2.043517
7	1.207239	1.258451	81.54225	14.98577	2.213529
8	1.295934	1.784080	80.25819	15.65462	2.303108
9	1.380084	2.449817	78.41794	16.79797	2.334275
10	1.458727	3.186327	76.38727	18.10473	2.321674

Variance Decomposition of LNGFCF

Period	S.E.	LNRGDP	LNMCAP	LNTVST	LNGFCF
1	0.228743	27.09475	11.30252	0.650350	60.95238
2	0.327719	42.06767	6.453252	3.349297	48.12979
3	0.401509	50.49080	7.543527	7.221948	34.74372
4	0.478690	51.02791	14.09054	10.29172	24.58983
5	0.552858	48.88480	21.61329	11.05261	18.44929
6	0.616955	46.38145	28.23657	10.54644	14.83554
7	0.672923	43.62197	34.18631	9.687668	12.50406
8	0.724607	40.62284	39.70535	8.841337	10.83048
9	0.774357	37.57894	44.74726	8.125041	9.548761
10	0.823068	34.68983	49.18401	7.584084	8.542073

Cholesky Ordering: LNRGDP LNMCAP LNTVST LNGFCF

The contribution of market capitalization to real GDP was 3% in the second year, 30% in the fifth year, and 69 percent in the tenth year, according to variance decomposition. The contribution of RGDP to itself, on the other hand, was 100% in the first year, about 65 percent in the fifth year, and around 27 percent in the tenth year. In the long run, LNMCAP adds considerably to RGDP. In the instance of LNMCAP variance decomposition, the contributions of LNRGDP and LNTVST were roughly 6% and 4% in the second year, 10% and 7% in the fifth year, and 11 percent and 12% in the tenth year, respectively. LNMCAP contributed 90% to itself in the second year, 80% in the fifth year, and 74% in the tenth year, suggesting that LNMCAP was the greatest donor to itself. LNMCAP contributed 59 percent to LNTVST in the second year, 80 percent in the fifth year, and 76 percent in the tenth year, whereas LNTVST contributed 38 percent in the second year, plummeted to 16 percent in the fifth year, and steadily rose to 18 percent in the tenth year. This means that throughout the research period, LNMCAP was the most significant contributor to LNTVST. LNRGDP and LNMCAP contributed 42 percent and 6 percent to gross fixed capital formation (LNGFCF) in the second year, 48 percent and 21 percent respectively in the fifth year, and 34 percent and 49 percent respectively in the tenth year. The contribution of LNGFCF to itself was 48 percent in the second year, 14 percent in the fifth year, and finally 8 percent in the tenth year. This conclusion supported the impulse response function's finding that a one standard deviation (SD) positive shock to market capitalization (LNMCAP) required up to the 6th to promote an increase in gross fixed capital creation (LNGFCF). In addition, the outcome indicated that

In the medium-term, LNRGDP contributed the most to LNGFCF, with 48 percent in the fifth year before decreasing to 34 percent in the tenth year.

4.2.3 Post-Estimation Analysis

The variables were submitted to a validity test to ensure the authenticity and validity of the results utilized in this study for analysis and forecasting, much as the unit root test was necessary for stationarity of the time series data. The primary post-estimation tests employed were the VAR residual serial correlation LM test and VAR residual normality tests employing the joint test of skewness, kurtosis, and Jarque-Bera tests, as shown in tables 1 and 2 of appendix I, respectively. The null hypotheses were all retained, indicating that the model was free of serial correlation and that the residual problems lacked normality, as evidenced by probability values greater than 5%. For further details, see Appendix I.

5. Conclusion and Recommendations

The objective of identifying the impact of the capital market on the growth of the Nigerian economy using historical data from 1981 to 2022was done using the vector autoregression (VAR) approach. According to our data analysis of the impulse response function and variance decomposition in the previous section, each variable will respond as follows:(i) In the short run, Real economy will grow by 0.8 percent in real terms, market capitalization (MCAP) will rise by 10% in both the short and long runs, total value of shares traded (TVST) will decrease by 4% in the short run but rise by 12% in the long run, and GFCF will rise by 6% in the short run but fall by 4% in the long run. (ii) In both the short and long runs, market capitalization (LNMCAP) will

increase by 3%, resulting in a 1% increase in LNRGDP in the short run and a 0.5 percent increase in the long run, a 28% increase in LNTVST in the short run but a 13% decrease in the long run, and a 1% increase in LNGFCF in the short run but a 1% increase in the long run. (iii) In the short term, the total value of securities traded (LNTVST) will lose 35% of its value, and in the long term, it will stay negative. It will encourage a 1% growth in LNRGDP in the near term, but in the long run, it will drop, and LNGFC will also diminish.

Finally, gross fixed capital formation (LNGFCF) will fall by 14% in the short run and remain asymptotic in the long run; it will have no effect on LNRGDP in the short run but will rise by 1% in the long run; it will result in a 5% increase in LNMCAP in both the short and long run; and LNTVST will oscillate between negative and positive values. The variance decomposition findings, on the other hand, revealed that LNRGDP contributes 96% to itself in the short run but only 26% in the long run, whereas LNMCAP provides 3% and 69 percent to LNRGDP, respectively.

LNMCAP made the most contribution to itself, contributing 90 percent in the short run and 74 percent in the long run, respectively. In the instance of LNTVST, LNMCAP contributed 59 percent and 76 percent, respectively, in the short and long run, while its own contribution was 38 percent and 18 percent. In the short and long term, LNRGDP provided 42 percent and 34 percent to LNGFCF, LNMCAP gave 6 percent and 49 percent to LNGFCF, and LNGFCF contributed 48 percent and 8 percent to itself. The study concluded that, while LNRGDP and LNMCAP positively influenced their own outcomes as well as the outcomes of other variables in the short and long run periods of the VAR model, LNTVST and LNGFCF negatively influenced their own outcomes as well as the outcomes of other variables in both the short and long run periods.The results agree with the findings of Odo, Anoke, Onyeisi, and Chukwu (2017).

Recommendations

The following recommendations are suggested based on the findings of this study:

(i) Capital market authorities should continue to build on the ease of doing business and create moreviable market products to attract investment to increase market liquidity, identify and resolve bottlenecks in share floatation with the goal of stimulating the market's long-term effect on real growth in Nigeria.

(ii) Improving the reputation of local companies listed on the Nigerian stock exchange in terms of the overall worth of their corporate assets and performance as assessed by price-to-earnings, price-to-sales, and return-on-equity measures is critical. This may be addressed if these companies can enhance the quality of their products and services, making them more competitive in the global market. This would boost Nigeria's economy by increasing confidence, attracting more investment, improving the capital creation process, and boosting economic development.

Further research into the issue should look at the factors that influence the growth of the stock market in Nigeria, given its importance in real-estate finance.

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Appendix 1

Table 1A: VAR Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h
Date: 02/15/24 Time: 12:59
Sample: 1981 2022
Included observations: 40

Lags	LM-Stat	Prob
1	25.80181	0.0569
2	22.70532	0.1218

Probs from chi-square with 16 df.

Table 2A: VAR Residual Normality Tests

Orthogonalization: Cholesky (Lutkepohl)
Null Hypothesis: residuals are multivariate normal
Date: 02/15/24 Time: 13:01
Sample: 1981 2022
Included observations: 40

Component	Skewness	Chi-sq	df	Prob.
1	-0.211395	0.268128	1	0.6046
2	0.811217	3.948434	1	0.0469
3	-0.057177	0.019615	1	0.8886
4	0.228978	0.314585	1	0.5749
Joint		4.550763	4	0.3366

Component	Kurtosis	Chi-sq	df	Prob.
1	4.047975	1.647379	1	0.1993
2	4.616761	3.920875	1	0.0477
3	3.423700	0.269283	1	0.6038
4	2.735455	0.104976	1	0.7459
Joint		5.942512	4	0.2035

Component	Jarque-Bera	Df	Prob.
1	1.915507	2	0.3838
2	7.869309	2	0.0196
3	0.288898	2	0.8655
4	0.419561	2	0.8108
Joint	10.49328	8	0.2321