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The impact of capital market on the economic growth of Nigeria

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Abstract

The study assessed how the capital market affected Nigeria's economic expansion. Specifically, the impact of the Nigeria stock exchange's total value of transactions (TVTs), all-shares index (ASIs) and stock market capitalisation (MCAP) on Nigeria's economic development was evaluated. Time-series data covering 1986–2021 was obtained in the study. Estimation methods used in the study's analysis include descriptive statistics correlation analysis, ARDL co-integration analysis, parsimonious error correction model, variance decomposition and other post-estimation tests. Discoveries from the study showed that MCAP positively impacts economic growth in the long and short run. The ASI affects economic growth positively and insignificantly in the long and short runs, and the TVTs exerts a significant positive effect on the economic growth of Nigeria. Hence, the study suggested that the Security and Exchange Commission should explore measures, including technological integration in trading activities, to deepen development in the capital market.

Keywords: All-share index, gross fixed capital formation, market capitalisation, real gross domestic product, total value of transactions;

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1. Introduction

The pace of growth of any economy is associated with the effectuality of its financial sector particularly the capital market which has considered its intermediation roles to be driven by economic growth (Adesina-Uthman, 2020; Shamsher, 2021). However, the growth of any economy is premised on the height of performance of the capital market; this which would command effective mobilisation and allocation of funds holds great prospects for the prosperity of the economy. The capital market maintains the basic function of fund channelisation and financial intermediation which are precursors for funds deployment from the excess unit to the economy shortage unit which is a critical factor for increasing investment and a guarantee for economic growth (Anderu, 2020). The economy of every nation requires deeply, a capital market that provides great avenues for the exchange of securities within investments, thus giving the populace a cause to invest in securities drives economic prosperity (Kamasa et al., 2023; Ubesie et al., 2020).

Even though the growth and prosperity of the economy follow the effectiveness of the several sectors in the real sector of the economy which includes the oil and non-oil sector; however, the performance of these sectors would be significantly constrained if the provision of finance is limited, this suggests the height of role that the capital market maintains especially in the economy of Nigeria (Umar, 2022; Yakubu, 2023). Although the non-oil sector has faced the full brunt of the abnormalities in the economy of Nigeria which is evident in its poor performance; the factors that have triggered this poor performance include the relatively reduced level of technology, increasing inflation, interest rate volatility, reduced investment, underutilisation of resources, dilapidated infrastructure, adverse investment climate, rescinding or non-implementation of policies, high level of corruption and most importantly, weak institutions such as the capital market which has reduced the domestic linkage that business firms require to growth; this is despite low financial provision to aid the improvement in capacity utilisation which guarantees noticeable growth in the economy of Nigeria (Israel, 2015).

1.1. Conceptual background

In the bid to resolve this menace, efforts have been exerted toward making finance available and accessible to individuals and corporate firms; this has further increased the role and significance of the capital market. No doubt, long-term funding is highly necessary for businesses in the real sector and it can be attained only when an active capital market exists solely as the sustainably effective mobilisation of long-term funds for the development of businesses and industries can ensure consolidated growth of Nigeria's economy (Israel, 2015). However, the scarcity of long-term funds causes the indispensability of the capital market particularly in an emerging country like Nigeria; this is unarguable as the capital market forms a significant aspect of any financial system as it occasions efficient association between financial institutions and infrastructures that ensures the provision of long-term funds in the economy (Kaka et al., 2021). The capital market considering the height of transactions carried out and listed securities provides corporate firms, government and households the chance to invest with the funds in the surplus unit; this guarantees adequate circulation of funds of the economy which is critical for the growth of the economy (Dalvi & Baghi, 2014).

However, considering the unimproved state of capital markets particularly in Nigeria, the potency of the market in such a country and its capacity of occasioning sustainable economic growth is almost in doubt; evidently, the role of the Nigeria capital market in commanding economic growth has attracted unending debates amongst policy makers, economics, scholars and stakeholders. Florence et al. (2017) and Olanrewaju et al. (2015) assert that the Nigerian capital market has unperformed as the most available market for corporate firms to obtain cheap funds towards attracting growth in their businesses. The availability of these funds makes certain the increased productivity and liquidity as well as causes firms to face reduced risk in their businesses and ensure the effective operation of these firms;

this would, however, shoot up the national income of the country which will further enhance the availability of corporate finance useable for long term investments, boost ownership of new firms, provides risk capital to business owners and most importantly provides a cheap alternative for fundraising within the borders of the country, this would no doubt boost the output of businesses which would ultimately improve the growth of the economy (Dalvi & Baghi, 2014).

In other to improve the effectuality of the capital market, Structural Adjustment Programme (SAP) was introduced in 1986; although the development occasioned noticeable growth in the financial sector and considering the noticeable role played by the capital market in the first 25 banks that met up with the 25 billion Naira lowest equity adequacy and survived the amalgamation exercise in 2005, the capital market has certainly demonstrated tremendous support for corporate firms and government in seeking long-term financing for significant projects (Oladipo & Tunde, 2013). The SAP further caused a noticeable change in the transaction rate, trading volume and the total number of listed securities; albeit, after the SAP was ignored in 1994, the performance of the capital market cascaded thus increasing its inability to mobilise funds to very vital sectors that are capable of triggering the growth of the economy; much regard was given to firms in the oil sector due to their capacity of boosting the foreign reserve of the country (Udo et al., 2021).

Shockingly, the dive in oil price in 2016 exerted a severe effect on the stock market which reshaped the capital market as obtained in the 2008 global financial meltdown, the stock market of Nigeria at that time suffered a huge setback which claimed over N1 trillion from the market capitalisation (MCAP) (Udo et al., 2021). Similarly, the fall in oil price also caused investors listed firms to pull out their investments and interest from the market, which suggests the level of macroeconomic uncertainty that has threatened the survival of the Nigeria financial system, especially the capital market caused massive loss for investors which consequently reduced their confidence in the market thus causing the growth of the capital market to fall and in effect, the growth of the economy was critically hampered (Onomu, 2021). This clearly explains the lack of medium and long-term capital which leaves corporate firms to explore only short-term funds in financing long-term investments; this which suggests an utter finance mismatch also indicates that these firms have per time adopted inappropriate capital mix has adversely affected their profitability, impeded the sustainable performance of these firms and constrained to the responsiveness of the contribution to the output of the economy of Nigeria for a consolidated economic growth (Edame & Okoro, 2013).

With an adequate idea of the grave implications of this menace, several research has been conducted to improve the effectiveness of the capital market as it affects the performance of the real sector and the ultimate growth of any economy. However, divergent findings were observed in the literature as Agu (2018) established that the capital market affects economic growth adversely now and in the future; Algaeed (2021), Ayaowei and Pullah (2020) and Babatunde et al. (2019) obtained mixed findings suggesting that some measures of developing Nigeria's capital market do not equate to growth; Yakubu (2023) specifically adjudged that capital MCAP and economic growth are positively and significantly correlated; while another strand of studies established that every capital market development indicators influence economic growth (Adesina-Uthman, 2020; Adolphus & Dibiah, 2021; Adoms et al., 2020; Anderu, 2020; Angaye & Bingilar, 2020; Celina et al., 2021; Dada, 2021; Kaka et al., 2021; Mamudu & Gayovwi, 2020; Onomu, 2021; Ubesie et al., 2020; Udo et al., 2021; Umar, 2022). However, considering the divergent findings, particularly the mixed results, there still exists doubt as to which capital market variable is stronger in influencing economic growth as none of these studies established which capital market indicator has the strongest effect.

1.2. Literature review

1.2.1. Capital market

The marketplace for seeking immediate and future finance is known as the capital market. This market is an establishment that offers both lending and borrowing services for long-term capital. The main and secondary markets make up the two different types of markets that make up the capital market. The main market is where new equities are traded in place of money through stock brokers. After that, the funds are put to use for capital investments such as reserving outstanding firm securities, purchasing new machinery or other equipment, safeguarding extra working capital, upgrading the IT infrastructure, and expanding the number of branches. The issuing company receives any money generated in the main market. Although current assets are traded on the secondary market, the proceeds go to the investors who are selling their holdings (Ailemen et al., 2016).

1.2.2. Nigerian capital market indices

Investigations into capital market measures since 1986 have shown that the market has experienced a notable improvement. Due to the stunted influence of information sharing and dispensation on market behaviours, initial equity dealings in the market were feeble. Nonetheless, there has been a shift in terms of market capability due to the computerisation of transactions and more openness in the disclosure of company information. As an illustration, consider market activity, particularly the total quoted companies, MCAP and the all-share index (ASI) (Ailemen et al., 2016).

1.2.3. Market capitalisation

MCAP is a metric used to gauge the size of an economy's equity market. It is a useful tool for estimating the stock market's size. The market value was less than N10 billion in 1988 and 1994. It reached its peak in 2007 and amounted to N13.229 trillion, but the global financial crisis caused a N7.030 trillion decline in 2009. It increased to N19.08 trillion in 2013 before the declining value of N2.20 trillion in 2014 (Ailemen et al., 2016). The MCAP to gross domestic product (GDP) ratio was 10.5% in 1981 but just 7.4% in 1994. It rose to 9.3% in 1995, 18.9% in 2003 and 25.0% in 2011 before rising to 35.6% in 2013 as reported by the Central Bank of Nigeria.

1.2.4. Securities listed

The number of stocks registered overall by the Nigerian Stock Exchange (NSE) rose from 13 in 1971 as it was 3 in 1961, 196 in 2007 and 201 in 2010. For SSM, it was 1 in 1985 before rising to 20 in 1995 and 1996. The total number of securities climbed to 261 in 2001 and between 2005 and 2006 it rose to 288, it experiences an increase in 2008 to 301 while a sharp decrease occurred between 2009 and 2011 to 250, and then surged to 280 by 2014. Despite these developments, the aggregate number of registered securities remained modest after over five decades of the NSE's existence (Nigerian Stock Exchange, 2014).

1.2.5. Transaction value

The NSE's yearly worth fluctuates between N100 and N600 million from 1961 to 1994. The transaction value increased and exceeded N1 billion in 1995. N2.379 trillion was reached in 2008, up from N120.70 billion in 2003. From 2009 to 2011, there was a decline in these trades. It climbed to N808.99 billion in 2012, N2.38 trillion in 2013 and then N1.34 trillion in 2014 (Ailemen et al., 2016). From 1961 and 1990, government stock had between 58.91% and 99.5% of the market's share. Industrial securities, particularly equities, dominated the market from 1995 to 2014.

1.2.6. Economic growth

Economic growth is defined as a rise in GDP or gross national income that increases an economy's real per capita income (Omar & Nazatal, 2018). Scholars have focused on economic growth since it is

seen as a crucial objective of economic policy. Traditional research predicts that labour and capital as components of production have a significant role in economic growth (Khosravi & Karimi, 2010). When an economy develops, a nation's potential GDP or output will rise. Tax policies that reduce tax evasion and avoidance, for instance, can boost GDP and utility levels if the public return on investment exceeds the private return.

1.2.7. Capital markets and economic growth

Theoretically, capital markets are expected to accelerate the growth of the economy by improving both the size and quality of investment. Growing businesses can also raise financing more affordably through the capital market. Additionally, firms in countries with strong stock markets may not depend on bank financing, which may reduce the chance of a financial plight. The ability of the capital market to facilitate corporate financing and encourage personal saving hence allows it to exert a favourable influence on the growing economy (Tembo, 2020; Yakubu, 2023). To pool, price and trade financial instruments, economic actors can do so on the capital market. It sponsors monetary savings from resources with alluring proceeds, liquidity and risk elements.

1.3. Purpose of the study

This investigation sets out to evaluate how the capital market influence Nigeria's economic growth giving close attention to the varying effect in the short and long-term and most importantly using the variance decomposition analysis to track the relative level of the varying effect of capital market measures on Nigeria's economic growth.

2. Materials and Methods

2.1. Model specification

This study adapts Babatunde et al.'s (2019) model which explored capital market development and the Nigerian economy; the model of Babatunde et al. (2019) captured the capital market with MCAP and volume of trade (VOT) while economic growth was proxied with GDP. For simplicity, Babatunde et al. (2019) model is demonstrated below:

$$GDP = f(MACP, VOT) \quad (1)$$

$$GDP = \beta_0 + \beta_1 MACP + \beta_2 VOT + e \quad (2)$$

where:

GDP = Gross domestic product;
MACP = Market capitalisation;
VOT = Volume of trade;
β_0 = Model relationship intercept;
β_1–β_2 = Independent variables coefficient; and
e = Stochastic/error term.

The above model was moderated to capture the ASI which reflects the variation in the share price average of every company listed on the Nigeria Stock Exchange; this variable is considered the most accepted measure of capital market performance. Similarly, the VOT does not suggest the mightiness and potency of transactions carried out in the market except the value of these transactions is huge; hence, the total value of transactions (TVTs) on the Nigeria Stock Exchange is subsumed into the modified model. More importantly, investment as established is the factor birthed by an efficient market that ultimately drives economic growth (Anderu, 2020; Ubesie et al., 2020). Hence, a measure of investment – gross fixed capital formation (GFCF) is also subsumed in the modified model as a control variable; the modified model is presented below:

$$RGDP = f(MCAP, ASI, TVT, GFCF) \quad (3)$$

Econometric form:
In testable form, the above functional model becomes:

$$RGDP = \lambda_0 + \lambda_1 MCAP_t + \lambda_2 ASI_t + \lambda_3 TVT_t + \lambda_4 GFCF_t + \varepsilon_t \quad (4)$$

where:

RGDP = Real gross domestic product;
MCAP = Market capitalisation;
ASI = All-share index;
TVT = Total value of transactions;
GFCF = Gross fixed capital formation; and
ε_t = Error term.

2.2. Data sources and estimation techniques

The secondary data utilised for this study came from the Nigeria Bureau of Statistics, CBN Statistical Bulletin, which was published in 2021, and the World Development Indicator published in 2021. Specifically, GDP data were gleaned from the World Development Indicator while capital market variables were amassed from the publications of the Nigeria Apex Bank and the Nigeria Bureau of Statistics. The data from these sources span from the period of 1986 to 2021 as evidenced and justified in the scope of this study. Data obtained in the study was estimated using the Augmented Dickey-Fuller (ADF) test of unit root, ARDL modelling approach to co-integration analysis, parsimonious error correction mechanism (ECM), variance decomposition analysis and other post-estimation tests.

3. Results

3.1. Descriptive analysis

Table 1
Variables Descriptive Statistics

	RGDP	MCAP	ASI	TVT	GFCF
Mean	40,222.90	7,771.643	17,763.30	509,396.6	35.51306
Median	33,365.00	1,735.900	20,429.79	173,111.3	28.63000
Maximum	87,487.56	32,476.65	57,990.20	2,350,876	89.40000
Minimum	15,237.99	6.800000	163.8000	225.4000	14.90000
Std. dev.	22,321.01	9,753.658	14,903.84	615,866.9	19.94878
Skewness	0.528326	1.021031	0.474128	1.042778	1.117935
Kurtosis	1.856480	2.841053	2.537072	3.361857	3.662214
Jarque-Bera	3.636223	6.292922	1.670236	6.720722	8.156459
Probability	0.162332	0.043004	0.433823	0.034723	0.016937
Sum	1,448,024	279,779.2	639,478.9	18,338,279	1,278.470
Sum sq. dev.	1.742110	3.337609	7.774509	1.336713	13,928.38
Observations	36	36	36	36	36

Source: Authors' computation (2022).

Table 1 above reported the average real GDP for the investigated time to stand at 40,222.90 million Naira, with minimum and maximum values of 15,237.99 and 87,487.56 million Naira, respectively. MCAP, ASI, TVT and GFCF stood at 7,771.643, 17,763.30 and 509,396.6 million Naira and 35.51306 billion Naira. The maximum and minimum values reported in Table 1 stood at 6.8 and 32,476.65 million Naira for MCAP, 163.8 and 57,990.20 million Naira for ASI, 225.4 and 2,350,876 million Naira for a TVTs, 14.9 and 89.40 billion Naira for GFCF, respectively.

Table 1's skewness statistics show that all of the study's variables are skewed to the right, with reported values of 0.528326, 1.021031, 0.474128, 1.042778 and 1.117935 for RGDP, MCAP, ASI, TVT and GFCF, respectively. According to the distribution peak and reported kurtosis values, all of the variables are platykurtic. For each variable, the reported kurtosis statistics were 1.856480, 2.841053, 2.537072, 3.361857 and 3.662214.

For RGDP, the Jarque-Bera values were 3.6362 (p = 0.1623 > 0.05) and 6.2929 (p = 0.0430 < 0.05) for MCAP, 1.6702 (p = 0.4338 > 0.05) for ASI, 6.7207 (p = 0.0347 < 0.05) for a TVTs, 8.1564 (p = 0.0169 < 0.05) for GFCF which reflects that all the variables are normality distributed except MCAP, TVT and GFCF.

3.2. Correlation analysis

Table 2
Correlation Matrix

	RGDP	MCAP	ASI	TVT	GFCF
RGDP	1.000000				
MCAP	0.960367	1.000000			
ASI	0.790385	0.740647	1.000000		
TVT	0.842289	0.844410	0.831878	1.000000	
GFCF	−0.793504	−0.656869	−0.782808	−0.685153	1.000000

Source: Authors' computation (2022).

Results of correlation estimation shown in Table 2 demonstrate that a positive correlation exists between real GDP and MCAP, ASI and the TVTs while a negative correlation exists between real GDP and GFCF. This result indicated that capital market proxies' activities move mostly in the same direction as economic growth. Precisely, correlation estimates stood at 0.9603 for RGDP and MCAP, 0.7903 for RGDP and ASI, 0.8422 for RGDP and TVT and −0.7935 for RGDP and GFCF, respectively.

3.3. Unit root analysis

Table 3
Unit Root Test Result Summary

	At level			At first difference			
Variables	ADF statistics	1% critical value	5% critical value	ADF statistics	1% critical value	5% critical value	Order of integration
RGDP	1.587472	−3.639407	−2.951125	−3.711070	−3.639407	−2.951125	I (1)
MCAP	1.686669	−3.632900	−2.948404	−2.423290	−3.639407	−2.951125	I (1)
ASI	−1.714641	−3.632900	−2.948404	−6.080651	−3.646342	−2.954021	I (1)

TVT	−1.898832	−3.632900	−2.948404	−6.069562	−3.646342	−2.960411	I (1)
GFCF	−4.631084	−3.632900	−2.948404	−3.528893	−3.639407	−2.951125	I (0)

Source: Authors' computation (2022).

Root-cause analysis results in Table 3 show significant values of the ADF test statistics' 1% and 5% significant levels. The findings showed that one of the variables is stationary at the level and the others are stationary at first variance since reported ADF statistics are smaller than the critical values at 1% and 5%, respectively. Despite this, every variable is stationary at level I and following the initial difference, demonstrating that the difference is stationary (0).

The variables' stated integration sequence provides information about how long they were exposed to novel shocks. The study's observed results showed that each variable only retains the revolutionary shock for a short while before letting go. Considering the evidence that variables are integrated at order one I (1) and level I (0), it follows that the presence of a unit root does not suggest that variables are connected in an equilibrium state in the short run. However, if the variables co-integrate, a long-term equilibrium connection is probable.

3.4. Co-integration analysis

Table 4

Johansen Co-Integration Test Result

Series: *RGDP MCAP ASI TVT GFCF*

Hypothesised no. of CE(s)	Trace statistics	5% critical value	Probability	Eigen value
None *	82.45461	69.81889	0.0035	0.624192
At most 1 *	49.17955	47.85613	0.0373	0.458115
At most 2	28.34772	29.79707	0.0728	0.403293
At most 3	10.79251	15.49471	0.2246	0.271944
At most 4	0.001705	3.841466	0.9646	5.013425

*Indicates that the hypothesis was rejected at a 1% level of significance.
A trace test at the 0.05 level reveals one co-integrating equation.
Source: Authors' computation (2022).

The co-integration test performed in Table 4 disclosed substantial evidence to discard the null hypothesis of no co-integration in favour of a three-co-integration equation. This means that while there is no equilibrium link between the capital market proxies in the short run, there is an equilibrium association in the long run as evidenced by observed long-term association. To avoid issues brought by the long-term relationship among the co-integrating equation, this work employed the fully modified OLS estimator, which has an entirely efficient mixture of normal asymptotics and is asymptotically unbiased.

3.5. Long run estimation

Table 5

ARDL Long Run Estimation Result

Series*: *RGDP MCAP ASI TVT GFCF

Variables	Coefficient	Probability
C	38,564.23	0.0000
MCAP	1.805282	0.0000

ASI	0.016568	0.0700
TVT	0.000629	0.0114
GFCF	331.0559	0.0000

R^2 = 0.9690, adjusted R = 0.9650 and Durbin-Watson = 0.9010.
Source: Authors' computation (2022).

Table 5 presented the long-run estimation result. It revealed that MCAP exerts a positive significant long-run effect on real GDP with an estimated value of 1.8053 (p = 0.00000 < 0.05). Furthermore, the result showed that the ASI exerts an insignificant positive influence on economic growth in the long-run, estimated at 0.0165 (p = 0.0700 > 0.05); TVTs exerts a positive significant long-run effect on real GDP in Nigeria with estimated value 0.0006 (p = 0.0114 < 0.05) and GFCF has a long-term substantial positive effect on real GDP with an estimated value of 331.0559 (p = 0.0000 < 0.05). According to R-square values reported, all the independent variables together account for about 96% systematic disparity in real GDP, all things being equal.

3.6. Error correction model

Table 6
Short Run Estimation Result
Series**:** *RGDP MCAP ASI TVT GFCF*

Variables	Coefficient	Probability
D (RGDP [−2])	0.206223	0.0768
D (RGDP [−3])	−0.490229	0.0765
D (MCAP)	−0.078008	0.0223
D (MCAP [−1])	0.525218	0.0589
D (MCAP [−2])	0.934686	0.0057
D (ASI)	0.113023	0.0914
D (ASI [−1])	0.043509	0.0494
D (ASI [−2])	−0.147189	0.0766
D (TVT)	−0.000125	0.0286
D (TVT [−1])	−0.001684	0.0513
D (GFCF)	−91.93648	0.0402
D (GFCF [−1])	−77.11515	0.2158
ECT	0.367160	0.0593
C	1,329.649	0.0796

R^2 = 0.6811, adjusted R^2 = 0.4509, Durbin-Watson = 2.1472.
Source: Authors' computation (2022).

According to the short-run estimation results shown in Table 6, MCAP has a short-term positive significant effect on the RGDP with an estimated value of 0.9346 (p = 0.0057 < 0.05), and ASI has a short-

term positive significant effect with a coefficient value of 0.0435 (p = 0.0494 < 0.05). This result also indicated that, in the long-run, the TVTs exerts a negative insignificant effect on real GDP with estimated coefficient 0.0001 (p = 0.0286 < 0.05) and GFCF exert adverse significant influence on real GDP with estimated value −91.9364 (p = 0.0402 < 0.05). With a probability value of 0.0593 and a coefficient of 0.3671, the one-period delayed error correction term indicates that about 37% of the short-run variations are yearly considerably adjusted and integrated into long-run dynamics. *R*-square figures of 0.45 were reported, this means that all independent variables jointly account for about 45% of the systematic change in RGDP.

3.7. Variance decomposition

Table 7

RGDP Variance Decomposition

Period	SE	RGDP	MCAP	GFCF	ASI	TVT
1	1,729.689	100.0000	0.000000	0.000000	0.000000	0.000000
2	3,174.690	91.97111	4.148459	0.083048	3.736692	0.060695
3	4,451.614	85.53093	7.966688	0.352206	5.599102	0.551073
4	5,540.971	82.60137	10.11770	0.434335	5.434148	1.412455
5	6,517.735	81.63565	10.68750	0.373536	4.755553	2.547758
6	7,433.525	81.52748	10.31193	0.298495	4.188262	3.673828
7	8,326.980	81.53123	9.788780	0.244396	3.850111	4.585481
8	9,215.836	81.31703	9.470003	0.212733	3.708747	5.291485
9	10,106.05	80.85439	9.362198	0.197273	3.679681	5.906457
10	10,999.62	80.27020	9.341395	0.185597	3.693509	6.509296

Source: Authors' computation (2022).

The result of the variance decomposition of RGDP to other variables in Table 7 reveals that in the short-run period 3, apart from own deviation, MCAP accounted for the higher variation to RGDP, followed by ASI, TVT and GFCF, respectively. However, in the long-run period 10, it is evident that MCAP still has the highest variation, followed by TVT, ASI and GFCF.

Table 8

MCAP Variance Decomposition

Period	SE	RGDP	MCAP	GFCF	ASI	TVT
1	1,969.874	19.53423	80.46577	0.000000	0.000000	0.000000
2	2,448.777	25.19169	64.02813	0.187587	1.711240	8.881349
3	2,797.345	29.51160	49.09108	1.422893	2.977680	16.99674
4	3,143.622	35.55054	39.63238	1.831804	4.628945	18.35633
5	3,588.374	39.32697	34.95039	1.455712	6.859099	17.40783
6	4,075.389	40.67495	32.31685	1.130280	8.428146	17.44977
7	4,551.351	41.76104	29.54221	0.943320	9.076197	18.67724
8	5,041.335	43.11196	26.75980	0.880436	9.322106	19.92569
9	5,575.400	44.46107	24.44844	0.837900	9.579982	20.67261
10	6,165.398	45.49563	22.74816	0.769267	9.931118	21.05582

Source: Authors' computation (2022).

The result of the variance decomposition of MCAP to other variables in Table 8 reveals that in the short-run period 3, apart from own influence, RGDP accounted for the higher variation in MCAP, followed by TVT, ASI and GFCF, respectively. However, in the long run, in period 10, it is revealed that RGDP has the highest variation, followed by TVT, ASI and GFCF.

Table 9

ASI Variance Decomposition

Period	SE	RGDP	MCAP	GFCF	ASI	TVT
1	6,851.744	21.54362	53.94282	7.682306	24.51355	0.000000
2	7,851.069	28.48686	41.20935	0.187454	28.27561	1.840730
3	8,820.297	31.36314	40.21133	0.559847	24.51451	3.351172
4	9,369.961	34.89137	39.62118	0.507120	21.97345	3.006884
5	9,756.984	38.20225	36.58974	1.455713	20.26636	3.485942
6	10,064.06	39.64493	34.85789	2.760508	19.05995	3.676725
7	10,251.50	40.75035	33.59587	3.287046	18.71918	3.647555
8	10,445.36	41.47248	32.71608	3.350883	18.81203	3.648529
9	10,653.83	42.00702	31.93193	3.366563	18.81463	3.879858
10	10,850.76	42.31513	31.07867	3.511301	18.68307	4.411835

Source: Authors' computation (2022).

The result of the variance decomposition of ASI to other variables in Table 9 reveals that in the short-run period 3, apart from own influence, MCAP accounted for the higher variation in ASI, followed by RGDP, TVT and GFCF, respectively. However, the long run period 10, revealed that RGDP has the highest variation, followed by MCAP, TVT and GFCF.

Table 10

TVT Variance Decomposition

Period	SE	RGDP	MCAP	GFCF	ASI	TVT
1	279,506.2	1.034886	32.27781	1.827860	4.309708	60.54974
2	379,400.3	8.148768	54.67053	1.889896	2.402873	32.88793
3	389,918.0	9.065697	54.39451	2.007088	2.492271	32.04044
4	405,529.5	12.70002	52.29812	2.602607	2.687091	29.71216
5	418,012.0	17.43617	49.22645	2.449790	2.529014	28.35858
6	433,115.6	21.13238	47.13434	2.652745	2.486811	26.59373
7	442,861.1	23.67261	45.62867	2.870132	2.391367	25.43722
8	450,440.2	26.01889	44.14964	2.860659	2.361772	24.60904
9	458,245.5	28.38640	42.65974	2.792466	2.378546	23.78284
10	466,237.5	30.71802	41.21018	2.750957	2.344719	22.97612

Source: Authors' computation (2022).

The outcome of the variance decomposition of the TVT to other variables in Table 10 reveals that in the short-run period 3, apart from own deviation, MCAP accounted for the higher variation in TVT, followed by RGDP, ASI and GFCF, respectively. However, in the long run, in period 10, it is ascertained that MCAP has the highest variation, followed by RGDP, GFCF and ASI.

Table 11

GFCF Variance Decomposition

Period	SE	RGDP	MCAP	GFCF	ASI	TVT
1	4.292960	5.720517	15.28837	78.99111	0.000000	0.000000
2	5.333895	10.88088	12.26056	76.69969	0.075676	0.083193
3	5.884366	17.49474	12.34043	69.35665	0.737795	0.070380
4	6.375485	24.19447	12.93866	60.72593	1.823838	0.317097
5	6.842062	30.65117	11.95349	53.74517	2.491620	1.158546
6	7.269102	35.41737	10.73654	48.71283	2.886830	2.246434

7	7.645480	38.47649	9.814210	45.06524	3.411985	3.232071
8	7.988916	40.20251	9.259148	42.09291	4.256158	4.189276
9	8.322291	40.88490	9.035873	39.45919	5.338368	5.281667
10	8.653842	40.68618	9.047122	37.13137	6.509286	6.626042

Source: Authors' computation (2022).

The result of the variance decomposition of GFCF to other variables in Table 11 reveals that in the short-run period 3, apart from own influence, MCAP accounted for the higher variation in GFCF, followed by RGDP, TVT and ASI, respectively. However, the long run period 10, revealed that RGDP has the highest variation, followed by MCAP, TVT and ASI.

3.8. Post-estimation tests

Table 12

Post-Estimation Results

Linearity-test		
Statistics	Values	Probability
T-statistic	2.146452	0.0400
F-statistic	4.607258	0.0400
Likelihood ratio	5.143177	0.0233
Normality-test		
Statistics	Values	Probability
Jarque-Bera stat	1.1011	0.5766
Serial-correlation LM test		
Statistics	Values	Probability
F-statistic	10.4587	0.0004
Heteroscedasticity test		
Statistics	Values	Probability
F-statistic	1.7111	0.1727

Source: Authors' computation (2022).

Table 12 above showed Ramsey test results alongside their respective likelihood values. Explicitly, the table displayed *t*-statistics of 2.1464 (p = 0.0400 < 0.05), *f*-statistics of 4.6072 (p = 0.0400 < 0.05) and likelihood ratio of 5.143 (p = 0.0233 < 0.05) therefore, there is insufficient evidence to discard the null hypothesis that the model is suitably stated.

Computed models' error term has a Jarque-Bera statistic value of 1.1011 (p = 0.5766 > 0.05). The results indicate that, given the probability value, there is no justification to reject the null that the error term of the estimated model is regularly dispersed. This supports the normal distribution of the error term.

Serial correlation LM test for Breusch-Godfrey result reported an *f*-statistics value of 10.4587, a *p*-value of 0.0004. The calculated model, therefore, does not have an autocorrelation issue.

The heteroscedasticity test in the table above revealed *f*-statistics and a *p*-value of 1.7111 (0.1727). This suggests no heteroscedasticity problem with estimated models.

4. Discussion

The most obtainable and efficient estimation carried out in this study showed that MCAP exerts a constructive major impact on economic growth in the long and short run, respectively. This finding suggests that as MCAP increases, real gross domestic growth heightens. MCAP describes the value of a company registered on the capital market per time; the value of a company either falls or shoots up and this tends to add to the capital market's growth. The effectiveness of this activity is occasioned by the value accumulated by firms as measured by their MCAP; it, therefore, translates that the dominance of corporate firms increasing MCAP guarantees relatively high activities and transactions in the capital market which provokes increased investment and ultimately enhances economic growth (Lin & Cheung, 2022; Sudrajad & Hübner, 2019).

According to the findings of this investigation, ASI affects economic growth positively and insignificantly in the short and long run. This suggests that as ASI increases, economic growth also scales up. Furthermore, the TVTs has a constructive influence on Nigeria's economic growth (Fasanya & Akinde, 2019). This is due to the presence of firms with increasing value on the stock exchange and the frequency of favourable movement in the price of shares listed. Additionally, the value of transactions carried out in the market if appreciable would aid the facilitation of funds to businesses willing to take both short and long-term loans towards business expansion and individuals willing to uptake investment in the country, contributing to the output of the nation which represents growth and prosperity.

5. Conclusion

Flowing on the analytical results established in this study, it is evident that capital market operations have an association with the economic growth of Nigeria. This study specifically established that MCAP and TVT exert a positive significant impact on economic growth in the long and short run while ASI affects economic growth positively and insignificantly in the short and long run. Overall, these discoveries evidence the existence of a noticeable impact exerted by the capital market on the economic growth of Nigeria. Considering these results, the following policy recommendations become imperative.

The Security and Exchange Commission (SEC) should explore measures including technological integration in trading activities towards deepening growth in the capital market and attracting the interest of foreign investors in the Nigerian economy. The SEC should engage NSE towards creating branches in local areas and encouraging corporate firms to cause their listing on the stock exchange as this would heighten the activities in the market and consequently increase economic growth. Policymakers should enhance MCAP with the deployment of measures that would boost foreign direct investment and consolidate the value of corporate firms that participates in the capital market.

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