

## **ANALYSIS OF CAPITAL MARKET DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA**

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### **Abstract**

*The significance of well-developed capital market in order to foster economic growth is highly imperative to developing countries, Nigeria inclusive. More so, capital market provides long-term financing that is designed to encourage economic growth. In view of the foregoing, this study examines the impact of capital market development on economic growth in Nigeria using annual data covering the period of 1981 to 2019. The analysis involves evaluating the stochastic characteristics of each variable under consideration by testing their stationary property and further estimates the model using ordinary least square technique, Johansen cointegration test and Granger causality test. Findings reveal the existence of a positive and long-run relationship between capital market development and economic growth in Nigeria. Further result from granger causality test indicates the presence of a unidirectional causality running from capital market to economic growth for the period under consideration. In lieu of that, there is need to make provision for modern facilities in the capital market targeted towards encouraging foreign investors by maintaining state of the art technological services. More so, there is need for Nigeria to develop a capital market that is effective and efficient, by expanding access to credit and financial services, encourage long-term savings mobilisation and long-term capital for investment.*

**Keywords:** capital market development; economic growth; ordinary least square technique; Johansen cointegration; Granger causality test; Nigeria.

### **Introduction**

Because of its ability to mobilise savings and investments, capital market is an essential agent of economic growth. In developing countries, high rate of capital formation is targeted to achieving objectives of development plans. As such, financial institutions are required to mobilise domestic savings and attract foreign investment with the view to accelerating sustainable economic growth. The growth of capital market is a precondition to inspire and guide capital formation. The potential role of capital market in encouraging investment and enhancing economic growth cannot be over emphasised. In today's competitive business environment, most countries around the globe are assessed by the performance of their capital market. Recently, numerous countries in the Sub-Saharan Africa have experienced financial sector reforms comprising of restructuring and privatisation of state owned banks, introduction of private banking systems and other variety of measures to promote the development of financial markets; including the establishment of more branches for capital market. With increased floor of domestic and foreign investors due to the structural reforms, the equity and debt markets have become successful investment tools for retail investors to increase their returns and also manage market risks. This creates further avenue for higher liquidity and high investment income, making capital market the engine of economic growth.

In the Nigerian business environment, capital market is one of the elements of financial system which organises and channels a long-term funds toward sustainable economic growth and development. Capital market incorporates trading both in primary (new issues) and the secondary (old issues) stocks. Primarily, there are two types of securities namely; debt and equity. Various types of debt securities available on the floor of the NSE comprises of bonds, stocks, federal government development stock, industrial loans, etc. For equity securities, it consists of ordinary stocks which impose higher liabilities on the holders. Similarly,

portfolio investment in the capital market deals with an institutional arrangement comprising of Securities and Exchange Commission (SEC), the NSE, the operators and the investors.

However, capital market is a collection of financial institutions established for granting of medium and long-term loans to investors, hence a market for corporate bonds and government securities. It is a market that mobilise and utilise a long-term fund for sustainable economic growth and development which is the prime objective of any growing economy. The market constitutes the most significant financial institution for considerable capital formation targeted towards output growth and manifold ownership base of business firm. Instruments that are traded in the capital market can be raised in a structured and organised market similar to the stock exchange market. When buyers and sellers of these instruments intend to conduct business transition, new issue (primary stock) market takes place while old issue (secondary stock) market or the stock exchange functions when shareholders of existing securities want to sell their securities. Also, the derivatives market is the trading on the securities providing payoffs that depend on or are contingent on the values of other assets.

Major actors or players in the Nigerian capital market comprise of the NSE, development banks, discount houses, individuals, government, investment banks, stock broking firms, Securities and Exchange Commission (the regulatory body), pension and insurance houses, and quoting companies. The essential yardstick used in mobilising funds at the Nigerian capital market comprises of government bonds, equities (ordinary shares and preference shares), industrial loans or debenture stocks and loans. The market makes available a different preference for portfolio managers and financial institutions and those savers through long-term fund mobilisation for corporate investors (portfolio managers) and financial institutions while providing platforms for savers to invest when the needs arise without upsetting the smooth operation of the firm.

Capital market is an essential part of the Nigerian economy which encourages industries, trade and commerce to flourish without any resource or capital hindrance. This market plays a crucial role in the growth and development of business firms, and it is a healthier platform for business entities and investors with expansion plans or new project that are in dire need of funding. The economy of Nigeria depends primarily on the oil sector. Industry, manufacturing and service sectors are entirely underdeveloped to propel the economy towards output growth. As enshrined in the Economic Recovery and Growth Plan (ERGP), the nation's long-term development plan is designed to transform the Nigerian economy to a developed country with sound atmosphere for trade and investment. A functioning and effective financial system is necessary for attaining this noble target, otherwise the country's growth prospects may be hindered. It is expected that capital market be developing in a manner that reaches common regulatory environments which enable a smooth and flexible flow of domestic and foreign investment.

Despite the vital role of capital market in capital formation and nation building, the Nigerian capital market is still underdeveloped and perform below its potentials compared to other capital markets in European economies. In addition, market capitalisation of the Nigerian capital market is low due to limited number of listed firms on the NSE and the limited participation of individuals (savers) either due to lack of capacity or lack of awareness as to the operational activities of capital market. These could be the outcome of high cost of operations, inflexible and rigorous listing requirements, poor awareness on the market operations, inadequate stocks information dissemination and relative uncertainty of returns. These hindering elements implies the need for further development and total overhaul of the Nigerian capital market.

Given the decline in economic performance aggravated by the COVID-19 pandemic, individuals and business organisations will require more long-term capital to sustain their business growth, hence the capital market is expected to intervene and mobilise the required capital as intervention fund by the government. This timely intervention and support may be difficult for capital market to provide, given the infancy-growth status of the market. Apart from the deficiency in financing the productive sectors of the economy, the impact of capital market has not been thoroughly investigated in Nigeria thereby creating a gap in the literature. Even though the relationship between capital market and economic growth in Nigeria may be beneficial to policy analyst, yet, there are lack of sufficient number of studies to explore this research domain. In view of

the foregoing, this study refers to the literature on the institutional role played by the capital market and further examines the development of the capital market and its impact towards sustainable growth in Nigeria. The remaining part of this study is organised as follows: section 2 deals with the origin and development of capital market in Nigeria covering both the pre-colonial and post-colonial era; section 3 presents and synthesises the related empirical literature on the impact of capital market on economic growth across both developed and developing economies; section 4 shows the materials (data sources) employed and the methods of analysis; section 5 presents the empirical results and other related findings; and finally, section 6 provides the concluding remarks.

### **Capital Market Development in Nigeria**

Development of capital market in Nigeria can be traced back to 1946 when the British colonial administration floated the first set of government securities (loan stock) for the financing of developmental project under the ten-year plan local ordinance. The loan stock which had a maturity of 10-15 years was oversubscribed, and yet local participation of the issued was abysmal. At that time, there was no institutional framework in place to support this business operation, hence the existence of less formal market arrangement for the operation of capital market; until 1960 when the Lagos Stock exchange was established. Activities and other operational undertakings of the Nigerian capital market started with the creation of Lagos Stock Exchange in 1960, which was later incorporated by law in 1961 through the combined efforts of Central Bank of Nigeria (CBN), industrial development banks, and the business communities; and promptly begins operations with 19 securities listed on the floor for trading. As the national development continues under the post-colonial reform and also following the recommendations of the government financial review committee of 1976, the Lagos Stock Exchange was later metamorphosed into the Nigerian Stock Exchange (NSE) in 1977.

With the establishment of the NSE, a sound groundwork was provided for the operation of Nigerian capital market with trading in long-term securities required for financing the aggregate economy. The NSE is a subsidiary of the Securities and Exchange Commission who performs as the regulatory agency of the capital market in Nigeria. Nevertheless, the stock exchange was only operational in Lagos, but in the mid 1970's, there was a clamour for an efficient financial system for the whole economy. A review was conducted to control for low capital formation, large volumes of currency in circulation which was held outside the banking system, and inadequate segregation between the operation of commercial banks and the emerging class of merchant banks. In response to the aforementioned scenario, federal government accepted the principles of decentralisation but chosen for a national stock exchange that will have branches across the country. In December 1977, a memorandum and article of association for the creation of Lagos Stock Exchange was transformed into the Nigeria Stock Exchange. Given the new transformation, the market commenced operation with nine (9) trading floors located across the country with their distinct years of establishment, namely; Lagos (1961), Kaduna (1978), Port Harcourt (1980), Onitsha (1990), Ibadan (1990), Abuja (1999), Yola (2002) and Benin (2005). With the addition of branches in Abeokuta, Bauchi, Ilorin, Kano, Owerri, and Uyo, the NSE has thirteen (13) branches across the federation with headquarter in Lagos. In 1971, only 14 companies were listed while securities transaction by volume stood at 952 valued at ₦18.1m. With respect to the value, government securities dominated the market and this amounted to 90.1 percent of the total while industrial stocks accounted for 78.6 percent of trading volume. The situation of the Nigerian capital market has immensely changed and developed since the establishment of the NSE in 1977. Furthermore, 1987, the NSE has been connected to the Reuters Electronic Contributor System for international on-line dissemination of market information. Also, the NSE instituted the internet system (CAPNET) as one of the required new technology infrastructures to enhance the challenges of internationalisation and improved service delivery.

Furthermore, the NSE upholds an All-Share-Index (ASI) that was formulated in January 1984 (1984 = 100) whereby only common stocks (ordinary shares) are included in the computation of the index. However, clearing, settlement, and delivery of transactions on the NSE are electronically conducted by the Central Securities Clearing System limited (CSCS), a subsidiary of the Stock Exchange. The CSCS Ltd also known

as the clearing house was incorporated in 1992 as part of measures by the government to ensure that the Nigerian Stock Market is highly efficient and investment-friendly. In addition to CSCS, Trade Alert was also introduced in 2005 to further secure the market against unethical conducts, especially unauthorised sale of client's share. The device also functions as an instrument for channelling market-related information to subscribers. These trends have encouraged market liquidity, provide opportunities for price recovery, improved market efficiency in service delivery, and further resulted in extraordinary growth both in the primary and secondary markets.

Since the year 1993 when the Nigerian capital market was deregulated, prices of new issues were determined by issuing houses or brokers in the primary market, while only stockbrokers determine the prices on the secondary market. In 1999, the NSE made an outstanding effort towards internationalisation of the market with the cross-border listings of M-net/Supersports on the NSE. The company was also simultaneously listed on the Johannesburg Stock Exchange (JSE). In further attempts to internationalise the capital market, the NSE signed a Memoranda of Understanding (MoU) with the Ghana Stock Exchange and the Nairobi Stock Exchange to facilitate the cross-border listing of securities. To count the success of this measure, Oando Plc (a Nigerian oil company) was granted secondary listing in 2005 on the JSE securities and the Exchange of South Africa. This international listing broadens the corporate financing options for Nigerian companies with the possibility of lessen the cost of domestic capital. As at October 2001, the total number of securities listed on the NSE was over 270 with the total market capitalisation of more than \$6 billion (1\$ = N115). This market capitalisation was a paltry 18 percent of the country's Gross Domestic Product (GDP) which then stood at \$33 billion. This increased operation has resulted to further output growth, encouraging higher consumption and spending among populace, and stimulating the growth of essential sectors including industry and telecommunication.

The NSE continues to evolve in order to meet the needs of its valued customers and to achieve the highest level of competitiveness. The Exchange has 366 listed securities comprising of 139 listed bonds, 173 equity/ordinary shares of companies, and 54 memorandum listings with a total market capitalisation of over ₦28 trillion (NSE fact sheet, 2020:Q2). Certain number of listed companies have foreign affiliations and also represent numerous segments in the economy ranging from the service sector, manufacturing sector, to agricultural sector. Furthermore, in acknowledging the essential functions of Small and Medium scale Enterprises (SMEs) in the general industrial development of Nigeria, the NSE introduced the Second-tier Security Market (SSM) for identifying and listing all SMEs that are unable to satisfy the inflexible conditions or requirements of the main Nigerian stock market.

### **Review of Empirical Literature**

Various studies awash the literature on the relationship between capital market development and economic growth across both developed and developing economies. There is no agreement whatsoever on the specific mechanisms underlying these relationships or on their direction of causality. Hence, the literature remains with mix reactions and inconsistencies on determining the true relationship among the variables. A good number of these studies are reviewed and synthesised as follows: Lazarov, Miteva-Kacarski and Nikoloski (2016) examine the influence of stock market development on economic growth for a group of 14 transition economies from the Central and South-East European (CSEE) region in the period 2002-2012 and further analyse the main characteristics and specificities of the stock market in the Republic of Macedonia. Using a panel regression models (fixed and random effects) and a dynamic panel model (Generalized Method of Moments – GMM) by adopting a single country approach and comparative analysis to examine the main characteristics of the Macedonian stock market, result shows that stock market development is positive and significantly correlated with economic growth. Using a stock market augmented model for a cross section of 35 developing countries, Cooray (2010) determines whether stock market leads to economic growth in those respective economies. Evidence shows that effort to increase the size, liquidity and activity of the stock market will further enhance economic growth.

Furthermore, Ebiringa, Thaddeus and Nnenna (2015) examine the behavioural pattern of economic indicators and determinants of economic indicators of capital market model influencing foreign investment

inflows between Nigeria and South Africa. By adopting granger causality technique, results in both countries indicate that; total value of transaction and market capitalisation are the main economic indicators of capital market model attracting foreign investment. In other words, economic indicators of capital market model influenced foreign investment in a short-run equilibrium relationship except interest rate having long-run equilibrium with foreign investment in South Africa. More so, Ngare, Nyamongo and Misati (2014) evaluate the role of stock market development on economic growth in Africa using annual data from a panel of 36 African countries over the period 1980–2010. By adopting a panel econometric technique, result shows that countries with stock markets tend to grow faster compared to countries without stock markets and countries which are relatively developed and have stock markets tend to grow less fast compared to small countries with stock markets. Furthermore, stock market development established a positive effect on economic growth.

Similarly, Coskun, Seven, Ertugrul and Ulussever (2017) investigate the links between the development level of capital market sub-components, involving mutual/pension funds, corporate bond, stock and government bond markets, and economic growth over the period of 2006:M1 and 2016:M6 in Turkey. Findings indicate the existence of cointegrating relationship between capital market development and economic growth and also a unidirectional causality running from capital market development to economic growth. Moreover, Pradhan, Arvin and Bahmani (2015) examine the cointegration relationships and Granger causality nexus in a trivariate framework among economic growth, inflation, and stock market development. Using 3 measures of stock market development and employing a panel vector autoregressive model over a panel of 34 OECD countries spanning 1960 to 2012, findings indicate a significant causal relationship between the variables both in the short-run and in the long-run.

More so, Coskun, Seven, Ertugrul and Ulussever (2017) investigate the links between the development level of capital market sub-components, involving mutual/pension funds, corporate bond, stock and government bond markets, and economic growth over the period of 2006:M1 and 2016:M6 in Turkey. Findings indicate the existence of cointegrating relationship between capital market development and economic growth and also a unidirectional causality running from capital market development to economic growth. To evaluate the macroeconomic determinants of stock market capitalization, Billmeier and Massa (2009) employed a panel of 17 emerging markets in the Middle East and Central Asia, including both hydrocarbon-rich countries and economies without sizeable natural resource wealth. Result shows that both institutions and remittances have a positive and significant impact on market capitalisation. Equally, Khetsi and Mongale (2015) examine the impact of capital markets on economic growth in South Africa covering the sample period of 1971 to 2013. Using cointegration approach, granger causality test and the vector error correction model, result indicates the existence of a positive relationship between economic growth and capital markets in South Africa.

From a small open economy that depends on bank financing, Marques, Fuinhas and Marques (2013) investigate the relationship between stock market and economic growth in Portugal for the period spanning 1993 to 2011. Using the Vector Autoregressive (VAR) modelling, Granger causality, variance decomposition and impulse response function to estimate the model coefficient, result shows an evidence of Granger bidirectional causality between the stock market and economic growth, but no causality running from bank financing to economic growth. Likewise, Pradhan, Arvin, Hall and Bahmani (2014) examine relationship between banking sector development, stock market development, economic growth, and four other macroeconomic variables in ASEAN countries for the period covering 1961 to 2012. Using principal component analysis for the construction of the development indices and a panel vector auto-regressive model for testing the Granger causalities, this study finds the presence of both unidirectional and bidirectional causality links between these variable.

In addition, Hassan (2018) examines the relationship between stock exchange efficiency and the quality of reported earnings for publicly listed firms from 16 MENA countries covering the sample period of 2001 and 2010. Findings show the existence of a positive relationship between stock exchange efficiency and the quality of reported earnings. Furthermore, Dewandaru, Rizvi, Bacha and Masih (2014) examine the factors

affecting stock market development in Islamic countries by employing a panel annual data of 11 main Islamic countries vis-à-vis the developed countries for the period spanning 1996 to 2011. Result indicates that all utilised macroeconomic determinants play a significant role in the developed countries. More so, Weild, Kim and Newport (2013) examine the structure of markets and the characteristics that make some more successful than others, with success defined as providing the most fertile ground for capital raising, effective allocation of capital, job creation and, ultimately, a stronger macroeconomy. Result shows that the primary determinant of long-term sustainability of Initial Public Offering (IPO) markets and other variables are significant drivers of economic growth.

Using a threshold estimation technique, Ng, Ibrahim and Mirakhor (2015) evaluate whether the growth effect of stock market development differs according to the distinct levels of ethical behaviour and trustworthiness in a cross-section of 73 jurisdictions during the post-crisis period. Results demonstrate that the impact of stock market liquidity on GDP and total factor productivity growth is positive and significant only where there is high level of ethical behaviour in firms. In another development, Njemcevic (2017) uses the PCSE model to test the significance of three capital market indicators on economic growth in South Eastern European region covering the period of 2003 to 2012. Result shows that only market capitalisation indicator is found to be significant on economic growth. Similarly, Oke (2013) examines the relationship between capital market operations and economic growth in Nigeria covering the sample period of 1985 to 2011. Using the OLS technique to estimate the model coefficients, result shows the presence of a positive relationship between capital market operations and economic growth both in the short-run and long-run periods.

In support of this, Ali and Fei (2016) examine the impact of Malaysia's capital market and other key determinants on economic growth and further determine the long-run and short-run relationship between the economic growth and capital market, foreign direct investment, and real interest rate by employing the bound testing cointegration of ARDL covering the sample period of 1988 to 2012. Findings indicate that capital market and real interest rate have positive impact on economic growth both in the short-run and long-run. To provide more evidence on this argument, Tuyon and Ahmad (2016) provides historical, theoretical, and empirical syntheses in understanding the rationality of investors, stock prices, and stock market efficiency behaviour in the theoretical lenses of behavioural finance paradigm. By employing a long span of Bursa Malaysia stock market data from 1977 to 2014 along the different phases of economic development and market states, result indicate the existence of asymmetric dynamic behaviour of prices predictability as well as risk and return relationships across different market states, risk states and quantiles data segments. Also, the efficiency tests show trends of an adaptive pattern of weak market efficiency across various economic phases and market states.

Moreover, Briggs (2015) investigates the impact of capital market on the economic growth of Nigeria covering the sample period of 1981 to 2011. Using a Johansen cointegration and Granger causality technique, result shows the existence of a long-run relationship between capital market and economic growth in Nigeria. As well, Nwaolisa, Kasie and Francis (2013) examine the impact of capital market development on economic growth in Nigeria under a democratic rule. By utilising a time series data and multivariate regression method to analyse the model coefficients, result shows that total market capitalisation and all share indexes exert positive influence on the GDP growth rate, the total value of stock has a negative effect on the GDP growth rate. Equally, Edame and Okoro (2013) examine the impact of capital market development on economic growth in Nigeria using a neoclassical growth (growth accounting framework). The study employs the OLS technique over a sample period of 1970 to 2010. Result shows that capital market and other related measure variables have positive and significant impact on economic growth in Nigeria.

Furthermore, Acquah-Sam and Salami (2014) assess the contribution of capital market development on economic growth in Ghana by adopting a multiple linear regression based on quarterly time series data covering the period of 1991:1 to 2011:4. More so, Structural Equation Modeling (SEM) through Path Analysis (i.e. Layered Regression Technique) was used to identify the possible causal relationship between GDP growth and capital market development, as well as other causal effects in the model. Result shows a

presence of linear association between GDP growth and capital market development in Ghana, and that a positive bi-directional relationship between economic growth and capital market development is also established. Likewise, Alenoghena (2013) investigates the contributions of capital market and financially deepening to economic growth in Nigeria spanning the period 1981 to 2012. Using the error correction mechanism model, result shows that stock market capitalisation, narrow money diversification (involving credit to the private sector) and interest rate significantly impacted the promotion of economic growth in Nigeria. Also, Owolabi and Ajayi (2013) examine whether or not stock market promotes economic growth in Nigeria. The study adopts the OLS technique to estimate the model coefficient covering the period of 1971 to 2010. Findings indicate the presence of a positive relationship between economic growth and all the stock market development variables within the period under consideration.

In a similar vein, Ajibola (2017) develops a model which examine how capital market development affects business cycle volatilities, and in the long-run economic growth through the use of multi-variable regression analysis. Result shows that capital market measures all have a positive but fairly insignificant impact on economic growth. Although the volatility measure established a negative but highly significant impact on economic growth which supports the endogenous growth model that developing countries (Nigeria inclusive) are highly susceptible to macroeconomic shocks such as money supply shocks, export supply shocks, productivity shocks, etc). More so, Engle-Granger co integration test reveals the presence of a long-run relationship between capital market development and economic growth in Nigeria. More to that, Taiwo, Adebayo and Evawere (2016) investigate the contribution of capital market to the growth of Nigeria's economy using an annual time series data covering the period of 1981 to 2014. The study employs a vector error correction technique to analyse the model coefficients, and the results show that market capitalization rate, total value of listed securities, labour force participation rate, accumulated savings and capital formation are significant macroeconomic determinants of economic growth in Nigeria.

Another evidence from the Malaysian economy, Nordin and Nordin (2016) examine the influence of stock market and the debt market on the Malaysian economy spanning the period 1981-2014. Using a cointegration approach and vector error correction model, result shows that Johansen cointegration test reveals the existence of cointegrating relationship between real growth domestic product per capita, stock market and debt market in Malaysia. Furthermore, vector error correction model reveals that both the stock market and the debt market indicate a positive and significant influence on the Malaysian economy. More so, Dabo (2015) examines the impact of capitalisation of the Nigerian capital market and its growth of the Nigerian economy using an annual time series data spanning 2001 to 2012. The study employs a regression analysis to estimate the model coefficients and determine the linkage among the variables. Findings indicate a unidirectional causality running from economic growth to stock market capitalisation at five percent level. Similarly, Rurangwa and Shukla (2017) investigate the relationship between capital market development and economic growth in Rwanda using quarterly time series data spanning 2009:Q1 to 2016:Q4. By adopting an OLS technique, finding indicates the presence of a positive impact of capital market development on economic growth in Rwanda. Equally, Amu, Nwezeaku and Akujuobi (2015) examine the impact of growth in capital market on economic growth in Nigeria using regression analysis. The study employs an annual data covering the period of 1981 to 2012. Results provide evidence to support the argument that capital market has a significant positive impact on economic growth in Nigeria for the period under consideration. Again, Adediran, Adeyemo and Alade (2015) investigate the economic integration caused by globalisation and effect of capital market in Nigeria using annual data covering the period of 1980 to 2008. By adopting a regression analysis, findings indicate that sound economic reform and financial policies are necessary to achieving sustainable development in Nigeria. Besides, Apollos, Stephen and Orimolade (2014) investigate the relationship between GDP, market capitalisation, and all share index in Nigeria using an annual data covering the period spanning 2000 to 2012. By employing a multiple regression technique, result shows the presence of a positive and significant relationship between economic growth and capital market variables. Likewise, Ologunwa and Sadibo (2016) examine the impact of capital market development and economic growth in Nigeria using aggregate data for growth indicators and capital market indicators. The study

employs a structural dynamic model including the Johansen cointegration and the vector error correction model to investigate the relationship between the variables. Result indicates that capital market ratio and turnover ratio are both significant and positive drivers of economic growth in Nigeria and that stock markets affect economic growth through savings mobilisation. Again, Yadirichukwu and Chigbu (2014) investigate the impact of capital market on economic growth in Nigeria using time series data covering the sample period of 1985 to 2012. By employing a regression analysis while incorporating multivariate cointegration and error correction technique, result shows the presence of positive relationship among the variables under consideration. In addition, Draženović and Kusanović (2016) examine the impulse of non-bank financial intermediaries' development, and further investigate the influence of implementing the above-mentioned structure reform on capital markets development in the selected transition countries. By applying a panel data approach on a sample of six Central European Economies (CEE) countries spanning the period 1995 and 2010. Result provides evidence on the specific determinants of emerging European capital markets. More to that, Regan (2017) evaluates the linkage between infrastructure investment activity, capital market development, the role of public institutions and economic development in the Asia Pacific. Using a panel data spanning 2004 to 2014, finding reveals that capital market development, and foreign direct investment have a significant and positive relationship with economic growth in Nigeria. Besides, Osho (2014) investigates the role of stock market on the Nigeria's economic development using annual time series data covering the sample period of 1980 to 201. Variables utilised include market performance and economic growth while OLS technique is adopted. Findings reveals the existence of a positive relationship between the development of financial intermediaries and economic growth. Again, Atoyebi, et al. (2013) investigate the impact of capital market on economic growth in Nigeria using annual data spanning the period of 1981 to 2010. Using the OLS and a vector auto regression technique, findings indicate the presence of a positive relationship between market index, market capitalisation and economic growth within the sample period. Besides, Nyasha and Odhiambo (2016) examine the dynamic causal relationship between financial systems and economic growth in three developing countries – South Africa, Brazil and Kenya – and three developed countries – the United States of America, the United Kingdom and Australia covering the sample period spanning 1980 to 2012. Using a trivariate Granger causality and the ARDL model, result shows the presence of a long-run causal flow from bank-based financial development to economic growth in the UK and Australia; a distinct feedback loop in the case of Brazil; and a neutrality relationship in the case of Kenya, South Africa and the USA. Also, Francis, Hassan and Ofori (2015) examine the impact of the development of capital markets on economic growth in Africa and reports a significant increase in real GDP per capita after stock exchanges are established. Findings indicate that stock markets play a complementary role to the banking sector by contributing to the availability of private credit in the region.

In a mixed reaction, Muritala and Ogunji (2017) investigate the relationship between the capital market and economic growth of Nigeria using annual data covering the sample period of 1980 to 2015. By adopting an OLS technique, result shows that total new issue, market capitalisation, and total listing positively impact the economy while the value of the transaction has a negative impact on economic growth. Also, Idenyi, Ifeyinwa, Samuel and Chibuzor (2017) investigate the impact of capital market indicators on economic growth in Nigeria covering the period of 1986 to 2016. By employing an ARDL model and a VAR Granger causality technique to analyse the variables in the model, result indicates that market capitalisation has positive significant relationship with economic growth; while stock traded total value exhibits a negative insignificant impact on economic growth.

In providing more evidence to this scenario, Maghanga and Quisenberry (2015) assess the role of Ugandan securities exchange towards enhancing economic growth using annual time series data covering the sample period of 1986 to 2010. By adopting the ARDL model, result shows a statistically significant correlation between economic growth and the Exchange, while real GDP appears to be closely correlated to market capitalisation within the period under consideration. From the Asian regions, Karim and Chaudhary (2017) investigate the effect of stock market development on economic growth of South Asia and East Asian regions, respectively using annual data covering the sample period of 1996 to 2015. By adopting a linear



panel data methodology, result shows that stock market development contributes to the economic growth of South Asian region but its impact on East Asian region found to be insignificant.

On the contrary, Pan and Mishra (2018) examine the effects of stock market development and economic growth on the Chinese economy. By adopting a structural breaks and the Autoregressive Distributed Lag (ARDL) model, results show that the global financial crisis from 2007 to 2012 had a significant impact on both the real sector and the financial sector in China. Further evidence indicates that Shanghai A share market has had a long-run negative association with the real sector of the economy. Likewise, Carp (2012) examine the dynamic of stock market in Central and Eastern Europe under the impact of macroeconomic imbalances while emphasising the volatility of foreign capital inflows. By adopting a Granger causality technique and utilising a data covering the period of 1995 to 2010, result shows the absence of a direct causal relationship in long-run between GDP growth rates, market capitalisation and stock value traded, but do confirm the bidirectional correlation between GDP growth rates and turnover ratio, for 5 percent and 10 percent levels, respectively.

To provide further evidence, Fufa and Kim (2018) examine whether the relationship between stock markets, banks, and economic growth becomes more evident as more homogeneous groups of countries are considered. The dynamic panel generalized method of moment estimator is employed using data of European and non-European high-income countries as well as upper and lower middle-income countries averaged over five and three years. Results indicate that the association between financial development and economic growth depends on the stages of economic growth of the countries. Countries with similar homogeneities exhibit a disassociated relationship between stock market and economic growth. In addition, Bayraktar (2014) evaluates the capacity and effort measures of stock market capitalization, which consider country characteristics, as diagnostic tool to assess the gap between the actual level of stock market capitalization and the capacity of countries. The study comprises of a panel study of 104 developing and developed countries for the period of 1990 to 2012. Result indicate countries with a low level or low effort of market capitalisation may experience rapid stock markets development in order to reach their capacity without causing major economic distortions, and vice versa.

More to that, Gajdka and Pietraszewski (2016) investigate the problem of relations between a capital market and real economy measured by the cross-country correlation between long-term stock rate of return and real GDP growth using a sample of Central and Eastern European countries. Findings indicate that it is difficult to establish a clear links between stock market and economic growth in the world economies. In addition, Jamil and Shazia (2013) examine the capital market deepening on economic growth of Bangladesh using the time series data on market capitalization-GDP ratio, total market turnover-GDP ratio and Savings-GDP ratio over the period covering from the year 1991 to 2011. Using the Ordinary Least Square, finding indicates that capital market deepening has little contribution to economic growth in Bangladesh. Besides, Ehigiamusoe (2013) investigates the impact of money market on economic growth in Nigeria using annual data covering the period of 1980-2012. By employing OLS technique, Johansen cointegration test and vector error correction model, findings indicate the presence of a long-run and short-run association among the variables. Although the money market exerts a negative and significant relationship with economic growth.

In another development, Abbas, Pei and Rui (2016) investigate the relationship between a stock market capitalization, total value of share traded and turnover on the economic growth of Tanzanian based on time series data covering the period of 2000 to 2011. Result shows that suggest that Dares Salam Stock Exchange (DSE) has no effect on economic growth of Tanzania Similarly, Oluwatosin, Taiwo and Yusuf (2013) investigate the impact of capital market on economic growth and development in Nigeria covering the sample period of 1999 and 2012. The study employs an OLS technique to estimate the model coefficients, and the result shows that capital market indices have not significantly impacted on the economic growth. In addition, Afolabi (2015) evaluates the impact of capital market on economic growth of Nigeria covering the sample period of 1992 to 2011. By employing a multiple regression technique, results indicate that capital market has an insignificant impact on the economic growth.

Given these conflicting views, further empirical exploration needs to be carried out with the view to determining a stable relationship between capital market development and economic growth in Nigeria. Even though the relationship among these variables is highly relevant and beneficial to policy analyst, yet, there are lack of sufficient number of studies to explore this research domain. Following the previous discussions and to provide a clear departure from the literature, this study examines the impact of capital market development on economic growth in Nigeria by incorporating certain variables of highly significant to proxy capital market in Nigeria.

## **Materials and Methods**

### **Data Sources**

This study utilised annual time series covering the sample period of 1981 to 2019 that are sourced from the official publications of the NSE and the statistical bulletin of the CBN. The rationale for chosen this time period is governed by the availability of data, and to also cover the period of adjustment policies in Nigeria including the period of global financial crisis (economic meltdown). The dataset constructed in the empirical model is based on the availability of adequate information on the variables adopted, namely real GDP (GDP), market capitalisation (MKC), total value of stock (TVS), all share index (ASI), and total new issues (TNI). The real GDP is selected as a proxy for economic growth, while the remaining four (4) variables are to serve as proxies for capital market in Nigeria. The data for ASI starts from 1985 to 2019 since the official computations begins in January, 1985. The decision for selecting these variables is informed based on the previous literature gap and on the fact that each of the variables quantify the stock market differently. All data are expressed in real term using 2010 base year in order to account for the effect of inflation.

### **Techniques of Analysis**

This study is based on the Neoclassical Growth Model which explain the sources of growth in an economy. The model argued that economic growth is a function of capital (K), labour (L) and technical progress (T) (Dwivedi, 2008). The linkage between the aggregate output and aforementioned variables are expressed in the form of production as follows:

$$Y = f(K, L, T) \tag{1}$$

The model is designed to accommodate other financial and economic variables including capital market elements proxy by market capitalisation; total value of stock; all share index; and total new issues. Such that, after incorporating the capital market variables, the model is now presented as:

$$GDP = f(MKC, TVS, ASI, TNI) \tag{2}$$

Where, GDP denotes the proxy for economic growth; MKC is the market capitalisation; TVS is the total value of stock; ASI is the all share index; TNI is the total new issues.

Various econometric techniques have been utilised in examining the impact of capital market on economic growth. While previous literature concentrates on cross-country methodology and panel regression approaches, this present study adopts the Ordinary Least Square technique and Granger causality test to determine the impact among the variables considering the sample and time period used in the empirical estimation. The regression analysis of the OLS technique is employed to examine the impact of capital market development on economic growth in Nigeria using a good number of independent variables, namely; market capitalisation (MKC), total value of stock (TVS), all share index (ASI), and total new issues (TNI), while real GDP as the dependent variable. From eq. (2), the model is re-written as:

$$GDP = MKC + TVS + ASI + TNI \tag{3}$$

To convert this model from a geometric expression to an econometrics equation, eq. (3) can be re-arrange and express as follows:

$$GDP_t = \alpha_0 + \beta_1 MKC + \beta_2 TVS + \beta_3 ASI + \beta_4 TNI + \varepsilon_t \tag{4}$$

Where,  $\alpha_0$  is the constant,  $\beta_1$ ;  $\beta_2$ ;  $\beta_3$ ;  $\beta_4$  are the coefficients to be estimated, t denotes time trend,  $\varepsilon_t$  denotes the error term. The a priori expectations of the parameters are that  $\alpha_0$ ;  $\beta_1$ ;  $\beta_2$ ;  $\beta_3$ ;  $\beta_4 > 0$ .

By taking the logarithm of the variables as stated in equation (4) and introducing a trend variable, the outcome can be transformed as follows:

$$LGDP_t = \alpha_0 + \beta_t + \beta_1 LMKC + \beta_2 LTVS + \beta_3 LASI + \beta_4 LTNI + \varepsilon_t \quad (5)$$

The rationale for transforming the variables into a natural logarithm is to ensure proper scaling among the model coefficients and to further obtain their elasticity coefficient.

*Gross Domestic Product (GDP)*: this refers to real GDP, which is an inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year. In other words, it is a measure of value of economic output adjusted for price changes.

*Market Capitalisation (market value)* is the share price times the number of share outstanding. This is a measure of capital market size and is used to ascertain the level of capital market development relative to the growth of the economy (Idenyi, et al., 2017).

*All Share Index*: A market index is a quick measure to judge the overall direction of the market and the scope of its movement. A market index is a statistical parameter to reflect the composite value of market characteristics. It is an average share prices of all companies on the stock exchange market, often used as a guide to compare the performance of different companies and industries (Idenyi, et al., 2017). In Nigeria, All Share Index started in January, 1985.

*Total Value of Stock (stock traded)*: Stocks traded refer to the total value of share traded during the period. This indicator complements the market capitalisation ratio by showing whether market size is matched by trading (Idenyi, et al., 2017).

*Total New Issue*: This is reference to a security that has been registered issued and is being sold on a market to the public for the first time. New issues are sometimes referred to as primary shares/new offerings. The term does not necessarily refer to newly issued stocks, although initial public offerings are the most commonly known new issues (Idenyi, et al., 2017).

On the other hand, Johansen cointegration is adopted to determine the existence or otherwise of a long-run relationship among the variables under consideration. Furthermore, Granger causality test is also employed in econometric analysis to test for the causal linkage between any two variables. In granger causality analysis, a variable X is said to have granger cause Y if the history of X can explain the variation in Y. In this scenario, economic growth (real GDP) is said to cause capital market development (MKC, TVS, ASI and TNI) if the past history of economic growth is able to explain the capital market. On the other hand, capital market development is said to cause economic growth if the past history of capital market development is able to explain economic growth. The model is given as:

$$\Delta Y_t = \delta_0 + \sum_{i=1}^p \beta_{1i} \Delta Y_{t-i} + \sum_{i=0}^p \phi_{1i} \Delta X_{t-i} + v_t \quad (6)$$

$$\Delta X_t = \delta_0 + \sum_{i=1}^p \beta_{2i} \Delta X_{t-i} + \sum_{i=0}^p \phi_{2i} \Delta Y_{t-i} + u_t \quad (7)$$

The test of null hypothesis  $H_0: \delta_t = 0$  can be conducted with the F-test. The outcome from the Granger causality test is used to determine whether the study variables can be used to predict each other or otherwise.

## **Results and Discussion**

To determine the impact of capital market on economic growth in Nigeria, time series data are utilised and further built-in into regression and cointegration estimates with the view to measure the influence of the model coefficients.

### **Unit root test**

In present estimations, any regression analysis based on time series data assumes that most macroeconomic variables are non-stationary. In such scenario, applying standard regression model to non-stationary data is inappropriate due to the expectation of spurious output. Therefore, determining the stationary or otherwise of each variable becomes very essential. For this reason, Augmented Dickey Fuller (ADF) test and the Phillips-Perron (PP) test are employed. The PP test provides more robust estimates in comparison with the ADF test. Results for these unit root tests are presented as follows:

Table 1: Result of ADF test

Variables	ADF Test				PP Test			
	No trend		With Trend		No trend		With trend	
	Level	1 <sup>st</sup> diff.	Level	1 <sup>st</sup> diff.	Level	1 <sup>st</sup> diff.	Level	1 <sup>st</sup> diff.
GDP	0.9424	0.0160*	0.8159	0.0738**	0.9867	0.0214*	0.3022	0.0942**
MKC	0.8509	0.0005*	0.9083	0.0031*	0.8520	0.0005*	0.8275	0.0036*
TVS	0.6584	0.0044*	0.9916	0.0173*	0.6585	0.0039*	0.9897	0.0173*
ASI	0.0703**	0.0068*	0.9735*	0.0007*	0.0593**	0.0057*	0.9891	0.0014*
TNI	0.0561**	0.0072*	0.2286	0.0261*	0.1405	0.0096*	0.4801	0.0318*

Note: \* indicates significant probability values at 5% level

\*\* indicates significant probability values at 10% level

Results from Table 1 show the summary outcome of the ADF and PP unit test, respectively. The estimation is conducted to measure the stationarity property of the variables without trend and also with the inclusion of trend and intercept. In the ADF test, findings indicate that all variables exhibit stationary at first differences in both trend and no trend estimates at 5% level of significance. Since their respective ADF values are greater than their critical values at 5% significant level, it implies the absence of unit root among the variables; hence all variables are stationary. On the other hand, PP test is also conducted to determine the stationarity property of the variables using trend and no trend approaches. Just like the ADF test, the PP test also indicates first difference stationary among the variables at 5% level of significant. Conclusively, both the ADF and PP tests indicate stationary at first differences whether trend or no trend inclusion at 5% level. This implies that trend and intercept has no significant implication on the model. This provides the basis for estimating the regression coefficients and cointegration framework.

### Regression estimates

In this study, ordinary least square regression analysis is conducted in order to examine the impact of capital market development on economic growth in Nigeria. Result from this approach is presented in a tabular form as follows:

Table 2: Result of the regression analysis

Variables	Coefficient	Std. Error	t-Statistic	P-values
MKC	0.3449	0.0302	11.5654	0.0000**
TVS	0.0201	0.0109	1.8390	0.0794**
ASI	0.2890	0.0971	2.9746	0.0070**
TNI	-0.0147	0.0743	-0.1976	0.8452
C	11.0849	1.0714	10.3454	0.0000**

R-squared = 0.97  
F-statistic = 252.03  
Prob(F-statistic) = 0.0000

Note: \*\* indicate significant at 5% level

Table 2 shows the result of regression analysis for the variables of capital market development on economic growth in Nigeria. Findings indicate that market capitalisation (MKC) has a positive coefficient of 0.34 with a p-value of 0.0000 significant at 5% level. This implies that one percent increase in MKC leads to 34% increase in economic growth. In addition, total value of stock (TVS) also depicts a positive coefficient of 0.02 with a significant p-value of 0.0794 at 10% level. Meaning that, one percent increase in TVS leads to a 2% increase in economic growth. Furthermore, all share index (ASI) demonstrates a positive coefficient of 0.28 with a p-value of 0.0070 significant at 5% level. This shows that one percent increase in ASI leads to 28% increase in economic growth in Nigeria. However, only total new issue (TNI) shows a negative coefficient with an insignificant p-value. The constant coefficient (C) of the regression shows a value of 11.08, implying that the hold constant of all regressors leads to 11% increase in economic growth. The aggregate result shows the presence of a positive relationship between market development and economic

growth in Nigeria. The R-squared; which measures the coefficient of determination is found at 0.97. This shows that all variables combined determine about 97% of capital market. In other words, 97% of the total variations in the activities of capital market in Nigeria are caused by market capitalisation, total value of stock, all share index, and total new issues. While the overall probability value of 0.0000 and F-statistic value of 252.03 show that the regression equation is well formulated and also explained the existence of a linear relationship between capital market development and economic growth in Nigeria. This result is consistent with the literature as established by Adediran, et al. (2015); Muritala and Ogunji (2017); Ajibola (2017) who also provide evidence of a positive relationship between capital market and economic growth in Nigeria.

**Cointegration result**

To provide further supports to the regression outcome, a Johansen cointegration test is conducted to determine the possible existence of a long-run relationship among the examined variables. The Johansen test builds cointegrated variables directly on maximum likelihood estimation instead of relying on OLS estimation. It also adopts two different likelihoods tests- the trace test and the maximum Eigen value test. A primary benefit of the Johansen test is that it can identify or estimate multiple cointegration relationships if the proposed data set contains two or more time-series variables relative to other techniques such as Phillips-Ouliaris methods and Engle-Granger test. The result is presented in a tabular form as follows:

Table 3: Result of Johansen Cointegration test

<i>Trace Test</i>				
No. of cointegrating equations	Eigenvalue	Trace statistic	5% critical value	P-values
None*	0.914937	143.6076	69.81889	0.0000**
At most 1*	0.832714	84.46301	47.85613	0.0000**
At most 2*	0.677554	41.54985	29.79707	0.0014**
At most 3	0.311423	14.38617	15.49471	0.0729
At most 4*	0.202518	5.431099	3.841466	0.0198**
<i>Maximum Eigenvalue test</i>				
No. of cointegrating equations	Eigenvalue	Max-Eigen Stats	5% critical value	P-values
None*	0.914937	59.14459	33.87687	0.0000**
At most 1*	0.832714	42.91316	27.58434	0.0003**
At most 2*	0.677554	27.16368	21.13162	0.0063**
At most 3	0.311423	8.955070	14.26460	0.2899
At most 4*	0.202518	5.431099	3.841466	0.0198**

Note: \*\* indicates significant probability values at 5% level.

Estimates from Table 3 show the result of Johansen cointegration test for all the variables under consideration. Findings reveal that both the trace test and the maximum Eigenvalue test have four (4) cointegrating equations since their respective statistics are greater than their 5% critical values. Therefore, the null hypothesis of no cointegrating vectors against the specific alternatives are clearly rejected. This implies the existence of a long-run relationship between capital market development (proxy by MKC, TVS, ASI and TNI) and economic growth (proxy by real GDP) in Nigeria for the period under consideration. This result is consistent with the previous studies as submitted by Briggs (2015); Idenyi, et al. (2017); Coskun, et al. (2017) who affirmed the existence of a long-run relationship between capital market and economic growth in Nigeria.

**Granger causality test**

In order to establish the causal relationship among the study variables, a granger causality test is conducted to evaluate the direction of causality between real GDP and other capital market variables namely, market capitalisation (MKC), total value of stock (TVS), all share index (ASI), and total new issues (TNI). Hence, results are presented in a tabular form as follows:

Table 4: Result from the Granger causality test

<i>Null hypothesis</i>	<i>Obs</i>	<i>F-statistic</i>	<i>P-values</i>
MKC does not Granger causes GDP GDP does not Granger causes MKC	38	11.4297 0.66403	0.0018** 0.4206
TVS does not Granger causes GDP GDP does not Granger causes TVS	38	19.0327 1.07539	0.0001** 0.3068
ASI does not Granger causes GDP GDP does not Granger causes ASI	34	5.36709 0.58487	0.0273** 0.4502
TNI does not Granger causes GDP GDP does not Granger causes TNI	26	2.92879 0.00125	0.1005 0.9721

Note: \*\* indicates significant p-values at 5% level

Table 4 shows the results of Granger causality test on the relationship between capital market development and economic growth in Nigeria. Findings indicate the MKC ganger causes GDP but GDP do not ganger causes MKC. In addition, there is also an evidence of causality running from TVS to GDP, and from ASI to GDP as their associated probability values of 0.0001 and 0.0273 are less than 0.05 at 5% significant level, but not vice versa. Only TNI do not show any causal relations with the GDP. This implies the existence of a unidirectional relationship between capital market and economic growth in Nigeria. By implications, it implies that changes in capital market helps in explaining the behaviour or variations in economic growth both in the short-run and long-run period; hence capital market has significant impact on the Nigerian economic growth for the period under consideration. This result is consistent with the previous literature as shown by Dabo (2015) who affirmed the existence of unidirectional causal relations between capital market and economic growth in Nigeria.

**Diagnostic test**

To ensure the robustness of the model estimates, diagnostic tests are conducted. The aim is to ensure that residuals generated by the model are stable and not serially correlated. Results from these tests are provided as follows:

Table 5: Diagnostic test

<i>Diagnostic Check</i>	<i>Test</i>	<i>Inferences</i>	<i>P-value</i>
Serial correlation	Breusch-Godfrey LM test	F-statistic = 1.146 Obs*R-squared = 6.810	0.3743 0.2351
Heteroscedasticity	Breusch-Pagan-Godfrey test	F-statistic = 0.348 Obs*R-squared = 1.609 Scaled explained SS = 0.758	0.8421 0.8071 0.9440
Stability	CUSUM test	5% significance level	0.0000**
Normality	Histogram	Jarque-Bera = 1.094	0.5784

Note: \*\* indicates significant p-values at 5% level

Table 5 shows the results from several diagnostic tests with the view to ensuring appropriate outcome. From the result, the p-values of serial correlation and heteroscedasticity tests reveal 0.3743 and 0.8421 which are greater than 0.05 (5% level of significance). Hence, the null hypothesis cannot be rejected implying the absence of serial correlation and heteroscedasticity in the model. Therefore, the residuals are homoscedastic and are not serially correlated. For the stability test, the CUSUM test shows that the model is within the 5% critical region. Furthermore, to detect the normality of the residuals generated by the model, the associated probability value of Jarque-Bera statistic is 0.5784 which is greater than 0.05 (5%) level. This implies that the residuals are normally distributed since the Jarque-Bera statistic is not significant. Hence, the null hypothesis of no normality will be rejected.

### **Conclusion and Policy Recommendations**

Capital market remains a major driver of every economy given its power to mobilise domestic and foreign investments and further influence economic growth. Capital markets can create greater financial inclusion by introducing new products and services tailored to suit investors' preference for risk and return as well as borrowers' project needs and risk appetite. Innovation, credit counselling, financial education and proper segment identification constitute the possible strategies to achieve the aforementioned targets. In view of the foregoing, this study examines the impact of capital market development on economic growth in Nigeria using annual data covering the period of 1981 to 2019. By adopting the OLS technique, cointegration and the Granger causality test, result shows the existence of a positive and long-run relationship between capital market development and economic growth. Further results from Granger causality test indicate the presence of a unidirectional causality running from capital market to economic growth for the period under consideration. In lieu of that, there is need to make provision for modern facilities in the capital market targeted towards encouraging foreign investors by maintaining state of the art technological services. More so, there is need for Nigeria to develop a capital market that is effective and efficient, by expanding access to credit and financial services, encourage long-term savings mobilisation and long-term capital for investment. In addition, government should design measures to restore investors' confidence through ensuring transparency and fair trading transactions in the Nigerian stock exchange.

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