Impact of Capital Market on the Economic Growth in Nigeria: An Empirical Analysis.

Chukwuemeka Nwamuo, Ph.D
Department of Economics Obong University, Obong Ntak, Akwa Ibom state – Nigeria
Corresponding Author: Chukwuemeka Nwamuo

Abstract: *The study investigated the impact of capital market on the economic growth in Nigeria: Annual time series data were obtained from the Central Bank of Nigeria Statistical Bulletin and Securities and Exchange Commission statistical bulletin for the period 1981 to 2016 on the variables used for the study. Unit root test was conducted using Augmented Dickey-Fuller test technique and the result showed that the variables were stationary though at different levels. Co-integration test was also conducted using Johanssen co-integration test method and the result showed that the variables in the model are co-integrated meaning that the variables have a long run relationship. The error correction mechanism showed that the coefficient of multiple determination (R^2) in the overparameterized model was 0.722639 while it was 0.594782 in the parsimonious model The short run regression result showrd that market capitalization and number of deals have a positive impact on the economic growth in Nigeria while total listed equity and volume of transaction have a negative impact on the economic growth in Nigeria.. The result from long run dynamic analysis also revealed that total listed equity has a positive and significant impact on the economic growth in Nigeria while number of deals has a negative and non-significant impact on the economic growth in Nigeria. Based on these findings, it was recommended that regulatory agencies should introduce and implement policies that will boost investor's confidence in the market by ensuring that there is transparency, fair trading and dealing in the market.*
Keywords: *Market capitalisation, listed equity, volume of transaction, economic growth.*

I.   Introduction

Capital market is a market which deals in long term loan. It comprises the complex of institutions and mechanisms through which medium-term fund and long-term funds are pooled and made available to individuals, business and governments. Capital market supplies industry with fixed and working capital and finance medium-term and long term borrowings of the central, state and local governments. The capital market deals in ordinary stocks, shares and debentures of corporations, bonds and securities of governments (Jhingan, 2005) Capital markets are primarily created to provide avenues for effective mobilization of idle funds from surplus economic units and channeled into deficit units for long-term investment purposes. The suppliers of funds are basically individuals and corporate bodies as government rarely supply funds to the market. The deficit units by contrast consist only of corporate bodies and government. In other words, individuals who are major suppliers of funds to the market are absent in the category of fund users. This is because conventionally, individuals cannot access the capital market for funds. Moreover, capital markets through secondary arms provide opportunities for the purchase and sale of existing securities among investors thereby encouraging the populace to invest in securities and fostering economic growth. The Nigeria capital market is categorized into primary and secondary markets. New securities are issued in the primary market, and companies issuing these securities receive the proceeds for the sale. The secondary market provides a forum for the sale of securities by one investor to another investor. Thus, the efficient functioning of the market paves way for the primary market by making investors more willing to purchase new securities in anticipation of selling such in the secondary market. These securities are the major instrument used to raise funds at the capital market (Ewah, Essang and Bassey, 2009). The capital market is designed to finance long-term investments by businesses, governments and households. Trading of funds in the capital market makes possible the construction of factories , highways, schools and homes (Rose and Marquis, 2009). As such capital market helps in capital formation and economic growth of the country (Jhingan, 2005)

1.1 Statement of Problem

The Nigerian capital market has performed fairly despite the numerous challenges and problems some of which include: the buy and hold attitude of Nigerians, massive ignorance of a large population of the Nigerian public of the nature and benefits of the capital market, few investment outlets in the market, lack of

---

capital market friendly economic policies and political instability, private sector led economy and less than full operation of recent developments like the Automated Trading System (ATS), Central Securities Clearing System (CSC), On-line and Remote Trading, Trade Alerts and Capital Trade Points of the Nigerian Stock Exchange (Edame and Okoro, 2013). Over the years, the Nigerian capital market has witnessed increased level of participation both by the private and public investors. The market has equally attracted the attention and the interest of foreign investors. For instance, total listed equity increased from194 in 1981 to 247 in 2016 while market capitalization increased from N5B in 1981 to N16185.5B in 2016. Moreover, volume of transactions increased from N304.8M in 1981 to N607407M in 2016. In the vein, number of deals increased from 10199 in 1981 to 837092 in 2016 (Securities and Exchange Commission, statistical bulletin 2017). Given that one of the functions of capital market is to provide medium-term and long-term fund in other to stimulate economic growth, these increases in the activities of the capital market is expected to generate a corresponding increase in the economic growth of Nigeria. Unfortunately, these increases in the activities of the capital market have not been able to generate a meaningful growth in Nigeria. The study therefore seeks to investigate the impact of capital market on the economic growth of Nigeria.

1.2 Objectives of the study
The broad objective of the study was to investigate the impact of capital market on the economic growth of Nigeria. The specific objectives of the study were:
(i)　To investigate the impact of market capitalization on economic growth in Nigeria
(ii)　To examine the impact of volume of transaction on economic growth in Nigeria
(iii)　To investigate the impact of number of deals on economic growth in Nigeria
(iv)　To examine the impact of total listed equity on economic growth in Nigeria

1.3 Hypothesis of the study:
In order to guide the study, the following null hypotheses were formulated:
HO_1: Market capitalization does not have any impact on economic growth in Nigeria.
HO_2:　Volume of transactions does not have any impact on economic growth in Nigeria.
HO_3:　Number of deals does not have any impact on economic growth in Nigeria.
HO_4:　Total listed equity does not have any impact on economic growth in Nigeria.

II.　Literature Review
2.1　Theoretical literature
2.1.1 Efficient market theory: The theory claims that security prices reflect all relevant information; that is, the current market price of a security incorporates all relevant information. If a financial market is efficient, then the best estimate of the true worth of a security is given by its current market price. In an efficient market, it is assumed that a large number of analysts are assessing the true value of firms. The analysts try to find stocks whose market prices are substantially different from their true values. If the analysts find such 'mispriced' securities, they buy or sell them, driving the market price instantaneously toward the true value of the security. Thus competition in the stock market pushes prices to their 'true' value. Thus, stock prices change every day, every hour, even every second as new information flows into the marketplace (Levy 1999).

2.2 Conceptual literature
2.2.1 Meaning of capital market: capital market refers to a collection of financial institutions set up for the granting of medium and long term loans. It is a market for long term instruments which include market for government securities, market for corporate bonds, market for corporate shares and market for mortgage loans. That is, it market for the mobilization and utilization of long term funds for development (Anyanwu, 1993). According to Jhingan (2005) capital market is a market that deals in long term loans. Capital market supplies industry with fixed and working capital and finance medium-term and long-term borrowings of the central, state and local governments. Rose and Marquis (2009) see capital market as a market designed to finance long-term investments by businesses, governments and households. Mishkin (2007) defined capital market as the market in which long-term debt (generally those with original maturity of one year or greater) and equity instruments are traded. Nwaolisa, Kasie and Egbunike(2013) defined capital market as a network of financial institutions and infrastructure that interact to mobilize and allocate long-term funds in the economy. The market affords business firms and governments the opportunity to sell stocks and bonds, to raise long-term finds from the savings of other economic agents.

2.2.2　Reasons for the establishment of capital market
According to Anyanwu (1993), the following were the reasons for the establishment of capital market
(a)　To introduce a code of conduct, check abuses and regulate the activities of the operations of the market.

(b)   To provide local opportunities for borrowing and lending for long term   purposes.
(c)   To enable the authorities to mobilise long -term capital for economic development of the country.
(d)   To provide facilities for the quotation and ready marketability of shares and stocks and opportunities and facilities to raise fresh capital in the market.
(e)   To provide foreign businesses with the facility to offer their shares, and the Nigerian public the opportunity to invest and participate in the shares and ownership of foreign businesses.
(f)   Through participation and ownership, to provide a healthy and mutually acceptable environment for participation and co-operation of indigenous and expatriate capital in the joint effort to develop the Nigerian economy to the mutual advantage of both parties.

2.2.3   Functions of capital market
The functions of capital market include:
(a)   The promotion of rapid capital formation
(b)   The provision of sufficient liquidity for any investor or group of investors
(c)   The creation of a built-in operational and allocational efficiency within the financial system to ensure that resources are optimally utilized at relatively little costs.
(d)   The mobilization of savings from numerous economic units for economic growth and development.
(e)   The encouragement of a more efficient allocation of new investment through the pricing mechanism.
(f)   The provision of an alternative source of fund other than taxation for government.
(g)   The broadening of the ownership base of assets and the creation of a healthy private sector.
(h)   The encouragement of a mere efficient allocation of a given amount of tangible wealth through changes in wealth ownership.
(i)   Provision of an efficient mechanism for the allocation of savings among competing   productive investment projects
(j)   It is a machinery for mobilizing long term financial resources for industrial development
(k)   It is an avenue for effecting payments on debt
(l)   It is a necessary liquidity mechanism for investors through a formal market for debt and equity securities (Anyanwu, 1993).

2.2.4   Problems of the Nigerian Capital Market
According to Edame and Ukoro (2013), the Nigerian capital market, like the national economy, has been faced with many problems. These problems are both endogenous and exogenous. The exogenous problems are those outside the direct control of the market but which are regulation-induced. The endogenous problems are those that are internal to the market but which are amenable to changes with improved operational procedures including the adoption of information technology. Some of these problems are discussed below:

(i) Small Size of the Market:
        Among the major problems facing the Nigerian capital market is the size of the market. At about 200 quoted companies and a market capitalization of 294.1 billion at the end-December, 1999 the size of the market can be considered to be small when compared with stock market in other emerging markets. For example, the South African stock market has about 650 listed companies while South Korea has about 700 listed companies. The small size of the Nigerian Stock market has been traced to apathy of Nigerian entrepreneurs to go public due to the fear of losing control of their businesses. Another factor is the weak private sector which is a serious constraint militating against healthy growth of the stock market.

(ii) Problem of Illiquidity of the Market:
        The liquidity of a stock market relates to the degree of access, which investors have in buying, and selling of stocks in such a market. The more liquid a stock market is, the more investors will be interested in trading in the market. The lack *of* adequate number of investors in the Nigerian stock market is a reflection of problem of illiquidity in the market. At an average ratio of 2 per cent per year, the turnover ratio, a measure 'of the value of shares traded relative to local market capitalization is very low in Nigeria, compared with 10.0 percent, 9.0 percent and 4.6 percent in Botswana, Zimbabwe and Mauritius, respectively. The low trading
        Activities are also a result of the ownership structure. Until 1995, when the Nigerian Investment Promotion Commission Decree 16 and the Foreign Exchange (Monitoring and Miscellaneous) provisions Decree 17 were promulgated to replace the Nigerian Enterprises Promotion Decree of 1984 and Exchange Control Act of 1962, the Nigerian stock market was restricted largely to local investors apart from the original investors in foreign companies who were already in the market before the indigenisation Decree of 1972. New foreign capital had little or no access to the market. The good performance of Botswana, Zimbabwe and Mauritius has been traced to the open door investment policy of these countries. In addition," the buy and hold"

attitude of Nigerian investors contributed to the problem of illiquidity. The holdings of original investors and the public sector are normally not traded' except for terminal divestment. This often leaves only the proportion of shares held by few individuals and institutional investors for trading on the market, thus, limiting the liquidity of the market

(iv) Delay in Delivery of Share Certificates:
Prior to April, 1997 when the Central Securities Clearing System (CSCS) started operation, the delay in delivery of share certificates to investors and intra-firm settlements used was a problem in the market. Many of the unclaimed certificates and dividend warrants that are being published regularly are as a result of the delay in delivery of certificates. With the introduction of CSCS, shareholders are now able to take advantage of capital appreciation while transaction period-has been reduced to T+5. The objective of the CSCS system is to achieve real-time transaction reporting, through automated order routing and executing system, which allows post-trade comparison and analysis, and ensures audit trail of all the market transactions.

(v) Problem of Manual Call-over
The manual call-over whereby all stockbrokers have to be physically present on the floor of the Exchange for trading in securities had also contributed to the slow growth of the market. With the recent introduction of Automated Trading System (ATS), it is expected that stockbrokers will be able to do business more efficiently and thus contribute to the growth of the market.

(vi) Double Taxation
The Nigerian stock market is faced with the problem of double taxation. In a capital market, the operating tax policies have implications for the supply and demand for financial assets. Depending on its nature and structure, taxation could either enhance or retard capital market growth. Tax can be a source of hindrance to development when it is high or levied at multiple stages. Currently in Nigeria, there is income tax, capital gain tax, withholding tax and company income tax. All these taxes together have the tendency of retarding investment because of their burden on investors. Most often, countries that have experienced growth in their stock market have come to realise the role which taxation plays in the promotion of investment in the stock market. For instance, countries like Botswana, Ghana, Kenya, Mauritius, Namibia and Swaziland have recognised the important role which taxation can play in the development of the market. Taxation of equities at both the corporate tax and dividend withholding levels is an important problem that needs to be examined. The practice in the U. K. may offer a useful example for Nigeria. In the UK, through the Advance Corporate Tax (ACT) System, individuals are given tax relief at the corporate level for distributed earnings. The ACT was introduced in Britain to correct the distortions which double taxation had on corporate investment. A number of developing countries like Columbia, Jamaica, Indonesia and Mexico, have one form of tax integration or the other. Presently, Nigeria has not taken any step to reduce the burden of double taxation as incentive for investment in the capital market. Apart from its use as a means of generating revenue, some countries have used tax policies as incentives for developing capital market. They have been used not only for the supply and demand for securities, but also as penalties for companies that were reluctant to go public. For example, Brazil used dividend tax exemption or reductions, stock acquisition tax incentives and provision of tax fund shares as incentives for developing the capital market.

(vii) Lack of Effective Underwriting
Lack of effective under-writing is one of the problems confronting the Nigerian capital market. Underwriting could be in the form of firm contract, or stand-by arrangement and when an issue is large, there would be need for an underwriting syndicate. An observed deficiency of the Nigerian securities market is the non-existence of effective underwriting. Though the issuing houses claim to undertake underwriting as part of their functions, and a consortium of underwriters often exist when shares are being offered, underwriting business has hardly taken place in the real sense of it. Underwriting entails effective placing of entire issues, and establishing or maintaining a stable trading market for the under-written securities for which there would always be a lead or managing underwriter. Only a few of the existing issuing houses can undertake such functions that guarantee the underwriting of the shares not absorbed by the investors up to a certain percentage.
The .underwriters are in fact the 'market makers' who purchase the securities concerned on their own account to maintain a price when the market price of the offered security falls under the issue price. When such problem arises, the lead or managing underwriter would be expected to buy all such securities and distribute them to the other members of the underwriting syndicate or consortium according to predetermined ratio.

(viii) Problem of Macroeconomic Instability

Lastly, the problem of macroeconomic instability in the country has continued to be a hindrance in the development of the Nigerian capital market. Macroeconomic policies that would ensure long-term stability are essential in attracting a sustainable long term investments. Such policies should be conducive to both savings and investment to ensure confidence in the economy. Policies must ensure attractive long-term yields for equities in comparison with other domestic and foreign investment alternatives. Frequent fluctuations in exchange rates and negative real rates of return on investments often force investors to move to other investment outlets or out of the economy entirely.

2.3 Empirical literature

Afolabi (2015) empirically examined the impact of the Nigerian Capital Market on the Nigerian economy looking at a 20 years period from 1992 to 2011. The Nigerian Capital Market was proxy as Market Capitalization against some variables of the economy such as Gross Domestic Product (GDP), Foreign Direct Investment, Inflation Rates, Total New Issues, Value of Transaction and Total Listing. Using the multiple regression analysis, the study finds that Capital Market has an insignificant impact on the Economy within the period under review. The study therefore advised that policies and measures that would boost investors' confidence should be enshrined in the running of Nigerian Capital Market so that it could contribute significantly to the growth of Nigerian economy noting that all elements of the market are essential ingredients to the development of a nation.

Atoyebi, Ishola, Kadiri, Adekunjo and Ogundeji, (2013) seek to determine the impact of capital market on economic growth in Nigeria using annual data from 1981 to 2010. In their empirical analysis, ordinary least square test was used to verify the statistical significance of the variables used and vector auto regression technique to determine the long run relationship within the variables in their study. Their empirical investigations revealed that two variables are statistically significant at 10% and these variables are market index and market capitalization. Also the coefficient value of these two variables suggest that a percentage increase in market index and market capitalization will bring about on the average 33.7 and 44.8 percentage increase in reel GDP. Their findings based on Johanson co-integration technique and vector auto regression suggested three co-integrating equation at 5% level of significant while the vector auto regression suggested the existence of long run relationship between stock market and reel GDP. The stability in the system was also determined through the vector autoregressive technique. Their study recommended that there is need to address the reported case of abuse and sharp practices by some companies in the market. There is also the need to boost the value of transactions in the Nigerian capital market; there is need for availability of more investment instruments such as derivatives, convertibles, future, and swaps options in the market.

Okoye, Modebe, Taiwo and Okorie (2016) investigated the relationship between capital market development and economic growth using data on GDP (proxy for economic growth), market capitalization ratio; value traded ratio and stock market turnover ratio (proxies for capital market development) over the period 1981-2014. Employing the econometric methodology of the vector error correction model, their study showed that in the short-run, market capitalization ratio and turnover ratio have significant negative effect on aggregate national output (GDP). Their study also showed positive effect of value traded ratio as well as negative effect of inflation rate on GDP though not significant. Their long-run estimate showed that all the exogenous variables have significant negative impact on GDP and that changes in market capitalization ratio, value traded ratio and turnover ratio produce more than proportionate changes in GDP. With an adjustment speed of about 91.12 per cent, their model presents an inherent capacity to overcome short-run disequilibrium. Their Granger causality test result shows evidence of causal impact of market capitalization ratio, value traded ratio and turnover ratio on aggregate national output. Their study further shows uni-directional causality from GDP to inflation. Their study established that stock market development constitutes a significant determinant of economic growth in Nigeria.

Yadirichukwu, and Chigbu, (2014) examined the impact of capital market on economic growth in Nigeria. In their study, a time-series research design relying extensively on secondary data covering 1985 -2012 was adopted. Their study utilized regression analysis as data analysis method incorporating multivariate co-integration and error correction to examine characteristics of time series data adopting disaggregate the capital market indices approach. Their finding suggested that two exhibited positive while two exhibited inverse and statistically significant relationship with economic growth. Their study recommended that relevant regulatory agencies should focus on enhancing efficiency and transparency of market to improve investor's confidence. Therefore the need for effective and favourable macroeconomic environment to facilitate economic growth and ensure that channels of capital market induced growth are built around effective systems; and that policy institutions are active in making systemic checks and appropriate policy innovations to ensure capital market led economic growth.

Taiwo, Adedayo and Evawere (2016) evaluated the contribution of capital market to the growth of Nigeria's economy. Their study estimated error correction model for economic growth in Nigeria, using Vector Error Correction techniques on an annual time series data spanning from 1981 to 2014. The data used in their study were subjected to Phillip Perron Unit Root Test at level and first difference. Their result showed that, at one percent significance level, all the variables were stationary at first differencing. Their result of the normalized co integrated series revealed that market capitalization rate, total value of listed securities, labor force participation rate, accumulated savings and capital formation are significant macroeconomic determinant factors of economic growth in Nigeria. The study recommended that, for the capital market to realizes its full potentials, its environment must be enabled to promote and encourage investment opportunities for both local and international investors, since the stock market operates in a macroeconomic environment. Consequently, an improvement in the Nigerian trading system with the aim of increasing the ease with which investors can purchase and sell shares, could guarantee the stock market liquidity.

Akeem (2011) examined the impact of capital market on the Nigeria economy and also examined how stock exchange market has contributed to the economic growth which aims at studying the second tier securities market. The secondary data employed in the work were collected from the statistical bulletin of the Central Bank of Nigeria (CBN) 2008. Their study used ordinary least square i for all variables in order to determine the linear relationship between the independent and independent variable. Multiple regression models were adopted in their study and the result from their regression models showed that the R^2 for model one and two are 0.840, 0.88 respectively, which implied that 84% and 88% variation in the dependent variable can be attributed to the variation in the independent variable, Also R^2 – adjusted of 0.799 and 0.874 implied that 79% and 87% showed a minimize error from the coefficient of determinant (R^2). The study concluded that integration into the world capital market will accelerate the growth process.

Adenusi, Sulaiman and Azeez (2013) addressed the impact of capital market development on economic growth and development since the liberalization policy in 1986 to 2010 in Nigeria. Their study employed Ordinary Least Square (OLS) and Johansen co-integration estimation techniques. Gross Domestic Product (GDP) was used as measure for economic growth while the capital market development were represented with Market Capitalization (MCAP), Total Value of Transaction (TVT), Total New Issues (TNI), All-Share Index (ALSI) and Total Listing on the NSE (TLT). The result of their study showed that capital market development has not impacted positively on Nigeria economic growth and development due to the relative small size of the market despite its development as a result of the liberalization policy. The study recommended that policies that would encourage domestic as well as foreign investors to participate in the market be formulated.

Onwe (2015) examined the impact of capital market on economic growth of Nigeria between the periods of 1990 – 2013. Their study adopted time series econometrics analysis to determine the long run and causal relationship between capital market and economic growth in Nigeria. The diagnostic tests carried out in the study include unit root, co-integration, Error Correction Mechanism (ECM). The study also used ordinary least square (OLS), in which changes in GDP was regressed on Market capitalization (MCAP), All share index (ASI), Total value for Transactions (VLT) and Turnover (TO) using annual time series data from CBN statistical bulletin. The result of their unit root showed that all variables were all stationary at first difference and also co-integrated of the same order in the long run. Their OLS result revealed that there was a significant impact of capital market on economic growth in Nigeria. Based on their findings, their study recommended that there is the need for government to intensify effort in promoting investment in Nigeria. This can be done by creating an enabling environment for investment to thrive in the country The higher the number of investors in the economy the more the patronage received by the Nigeria stock exchange. Apart from improving the stock market development, investment will also increase domestic output which is a major antidote for any ailing economy.

III. Methodology

Multiple regression analysis was used in the study. Time series data spanning from 1981 to 2016 was sourced from the Central Bank of Nigeria statistical bulletin and. Securities and Exchange Commission, statistical bulletin. The data were analysed using E-views. 9

3.1 Model specification
In order to investigate the impact of capital market on economic growth in Nigeria, the model for this study is specified thus;

GDP = f (MCAP, VOT, NOD, TLE)….. (1)
Where; GDP = Gross Domestic Product (proxy for economic growth)
MCAP = Market capitalisation

VOT = Volume of transaction
NOD = Number of deals
TLE = Total listed equity

The model in its econometric linear form can be written as:

$$GDP = b_0 + b_1 MCAP + b_2 VOT + b_3 NOD + b_4 TLE + U \qquad \ldots\ldots (2)$$

U = stochastic or random error term
b_o = constant intercept
$b_1 - b_4$ = coefficients of associated variables

The model in the log linear form can be expressed as:

$$LogGDP = b_0 + b_1 LogMCAP + b_2 LogVOT + b_3 LogNOD + b_4 LogTLE + U \text{ -- (3)}$$

Where :
Log = natural logarithm

The theoretical expectations about the signs of the coefficients of the parameters are as follow: $b_1>0$, $b_2>0$, $b3>0$, $b4>0$.

Since the data for the analysis is time series, the Augmented Dickey-Fuller (ADF) unit root test was employed to ensure data stationarity and avoid the problem of spurious regression. The Johansen test for co-integration was also employed to investigate whether there is existence of long run relationship among the variables in the model. Error correction model was also adopted to determine the rate of adjustment from short run equilibrium to long run equilibrium

Table 1: Unit root test result

Variables	ADF test statistic	5% critical value	Order of integration
RGDP	-4.903649	-2.948404	1(0)
MCAP	-5.807763	-2.951125	1(1)
TLE	-6.339224	-2.951125	1(1)
VOT	-6.815330	-2.951125	1(1)
NOD	-7.549507	-2.951125	1(1)

The unit test result presented on table 1 showed that RGDP was stationary at levels while other variables (MCAP, TLE VOT and NOD) were stationary at first difference. This is because their various ADF test statistic were greater than their various 5% critical values in absolute terms.

Table 2: Johanssen co-integration test result
Series: RGDP MCAP TLE VOT NOD
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.864215	112.4996	69.81889	0.0000
At most 1	0.462036	44.61232	47.85613	0.0977
At most 2	0.369561	23.53358	29.79707	0.2208
At most 3	0.193934	7.848088	15.49471	0.4818
At most 4	0.015121	0.518036	3.841466	0.4717

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.864215	67.88728	33.87687	0.0000

At most 1	0.462036	21.07874	27.58434	0.2715
At most 2	0.369561	15.68550	21.13162	0.2438
At most 3	0.193934	7.330052	14.26460	0.4509
At most 4	0.015121	0.518036	3.841466	0.4717

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
Series: RGDP MCAP TLE VOT NOD
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.864215	112.4996	69.81889	0.0000
At most 1	0.462036	44.61232	47.85613	0.0977
At most 2	0.369561	23.53358	29.79707	0.2208
At most 3	0.193934	7.848088	15.49471	0.4818
At most 4	0.015121	0.518036	3.841466	0.4717

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.864215	67.88728	33.87687	0.0000
At most 1	0.462036	21.07874	27.58434	0.2715
At most 2	0.369561	15.68550	21.13162	0.2438
At most 3	0.193934	7.330052	14.26460	0.4509
At most 4	0.015121	0.518036	3.841466	0.4717

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

The trace test indicates that there was 1 co-integrating equations at 0.05 level. The max-eigen value test also indicates that there was 1 co-integrating equations at 0.05 level. These results showed that the variables are co-integrated. That is, RGDP has a long run relationship with MCAP, TLE, VOT, and NOD.

The ordinary least square (OLS) result conducted on the specified model is presented on table 3. The OLS result reveals the short run relationship that exists between the dependent variable and each of the explanatory variables.

Table 3. Ordinary Least Square (OLS) Results: Short-Run Analysis
Dependent Variable: LOG(RGDP)
Method: Least Squares
Sample: 1981 2016
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.75189	4.706964	2.496703	0.0181
LOG(MCAP)	0.369861	0.132878	2.783459	0.0091
LOG(TLE)	-0.377617	0.915213	-0.412600	0.6827
LOG(VOT)	-0.205282	0.147585	-1.390946	0.1741
LOG(NOD)	0.039961	0.181798	0.219810	0.8275

R-squared	0.625017	Mean dependent var	10.28431
Adjusted R-squared	0.576632	S.D. dependent var	0.626336
S.E. of regression	0.407536	Akaike info criterion	1.170872
Sum squared resid	5.148658	Schwarz criterion	1.390805
Log likelihood	-16.07569	Hannan-Quinn criter.	1.247635
F-statistic	12.91761	Durbin-Watson stat	2.272677
Prob(F-statistic)	0.000003		

From the results of the OLS, the constant parameter (Bo) is positive at 11.75189. This means that if all the independent variables are held constant, RGDP as a dependent variable will on the average increase by 11.751 percent. For MCAP, the coefficient is 0.369861. This means that MCAP is positively related to GDP. This implies that on the average, one percent increase in MCAP will lead 36.99 percent increase in RGDP and this is in conformity to our aprori expectation. The result also shows that the coefficient of TLE is negative and is contrary to our aprori expectation. The result shows that on the average, one percent increase in TLE will lead to 37.76 percent fall in RGDP. The result equally shows that the coefficient of VOT is negative and this is also contrary to our aprori expectation. From the result one percent increase in VOT will lead to 20.53 percent fall in RGDP on the average. The result also reveals that the coefficient of NOD is positive and is in conformity with our aprori expectation. The result shows that on the average, one percent increase in NOD will lead to 3.99 percent increase in RGDP. The R-Square value of as 0.625017 shows that about 62.50 % of the total variation in the dependent variable (RGDP) were explained by changes in the explanatory variables (MCAP, TLE, VOT and NOD). . The F-statistic of 12.81761 with the corresponding probability value of 0.0000 measured the adequacy of the regression model and the overall influence of MCAP, TLE, VOT and NOD on RGDP. Since P = 0.000 < 0.05 (level of significance), the model was a good fit and the explanatory variables (MCAP, TLE, VOT and NOD) jointly exerted a statistically significant effect on the dependent variable (RGDP). The Durbin-Watson value of 2.272677 shows the absence of autocorrelation.

The next step is to perform the over parameterised and parsimonious error correction method to account for short- run dynamic adjustments required for stable long run relationship among the variables in the model. The over parameterized model is presented in table 4 The over parameterized model account for model misspecification problems as a step towards arriving at a preferred or parsimonious model. This is presented below.

Table 4 Over-Parameterised Error Correction Results.
Dependent Variable: D(LOG(RGDP))
Method: Least Squares
Sample (adjusted): 1984 2016
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.942252	2.315806	-0.838694	0.4133
D(LOG(MCAP))	0.424069	0.393796	1.076876	0.2966
D(LOG(MCAP(-1)))	0.086144	0.501245	0.171860	0.8656
D(LOG(MCAP(-2)))	-0.758790	0.511052	-1.484762	0.1559
D(LOG(TLE))	0.625863	1.780220	0.351565	0.7295
D(LOG(TLE(-1)))	2.903108	1.866486	1.555387	0.1383
D(LOG(TLE(-2)))	3.387285	1.667887	2.030883	0.0582
D(LOG(VOT))	-0.211562	0.247358	-0.855287	0.4043
D(LOG(VOT(-1)))	0.265752	0.246371	1.078663	0.2958
D(LOG(VOT(-2)))	0.179085	0.222648	0.804343	0.4323
D(LOG(NOD))	-0.395519	0.292854	-1.350565	0.1945
D(LOG(NOD(-1)))	-0.428473	0.251940	-1.700695	0.1072
D(LOG(NOD(-2)))	-0.081144	0.262419	-0.309216	0.7609
LOG(RGDP(-1))	0.199940	0.226714	0.881907	0.3901
D(LOG(RGDP(-2)))	-0.155000	0.175508	-0.883150	0.3895
ECM(-1)	-1.592369	0.355690	-4.476844	0.0003

R-squared	0.722639	Mean depend ent var	0.048189

Adjusted R-squared	0.477909	S.D. dependent var	0.575062
S.E. of regression	0.415516	Akaike info criterion	1.387810
Sum squared resid	2.935107	Schwarz criterion	2.113390
Log likelihood	-6.898870	Hannan-Quinn criter.	1.631946
F-statistic	2.952799	Durbin-Watson stat	1.548026
Prob(F-statistic)	0.017322		

In the over parameterized model as shown in table 4, the error correction term ECM (-1) is correctly specified. It is negative and statistically significant. This means that it will be effective to correct any deviations from the long-run equilibrium. Moreover, the negative and statistically significant of the ECM confirms that the variables in the model are co- integrated The coefficient of the ECM(-1) which is -1.592609 indicates that the speed of adjustment to long run equilibrium is 159.3 percent when any past deviation must be corrected in the present period. This means that the present value of RGDP adjusts so fast to changes in MCAP, TLE, VOT and NOD.. The coefficient of determination (R^2) in the over parameterized model is 0.722639. This means that about 72.3 percent of the variations in the dependent variable (RGDP) is explained jointly by the explanatory variables in the model. The F-statistic of 2.952799 with probability of 0.017322 is significant. This means that the explanatory variables in the model (MCAP, TLE, VOT and NOD) are jointly significant. The Durbin Watson statistic of 1.548026 means the absence of autocorrelation. RGDP (-1) is positive and statistically insignificant while RGDP (-2) is negative and statistically insignificant.. This means that RGDP in the one lag period impacts positively and is statistically insignificant on current period RGDP while two lag periods of RGDP impacts negatively and also statistically insignificant on current RGDP. MCAP in the current period and MCAP in the one lag period impact positively and are statistically insignificant on the current RGDP. The sign of the coefficient of MCAP in the current period and in the one lag period are in conformity with our aprori. MCAP in the two lag periods has a negative impact and is also statistically insignificant on the current RGDP. TLE, TLE in the one lag period and TLE in the two lag periods all have a positive impact and are also statistically insignificant on the current RGDP. The sign of their coefficients also conform to our aprori. VOT in the current period impacts negatively and is also statistically insignificant on current RGDP. The sign of its coefficient contradicts our aprori.. The impact of VOT in the one lag period and two lag periods were positive and statistically insignificant. NOD in the current period, NOD in the one lag period and NOD in the two lag periods impact negatively and are statistically insignificant on the current RGDP.

The next step is to perform the parsimonious model which is a stepwise reduction of jointly insignificant variables in the over parameterized model until parsimony is achieved. In other word, the parsimonious model would be built by estimating the equations of only those variables found to be significant in the over-parameterized model. This is presented in table 5

Table 5. Parsimonious Error Correction Result

Dependent Variable: D(LOG(RGDP))
Method: Least Squares
Sample (adjusted): 1984 2016
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.063422	0.072904	0.869931	0.3917
D(LOG(TLE(-1)))	2.533875	1.228491	2.062592	0.0485
D(LOG(TLE(-2)))	1.429508	1.216779	1.174830	0.2500
D(LOG(NOD(-1)))	-0.356953	0.184836	-1.931184	0.0636
ECM(-1)	-1.137609	0.181629	-6.263365	0.0000

R-squared	0.594782	Mean dependent var	0.048189
Adjusted R-squared	0.536893	S.D. dependent var	0.575062
S.E. of regression	0.391341	Akaike info criterion	1.100250
Sum squared resid	4.288128	Schwarz criterion	1.326994
Log likelihood	-13.15413	Hannan-Quinn criter.	1.176542
F-statistic	10.27464	Durbin-Watson stat	1.968196
Prob(F-statistic)	0.000030		

In the parsimonious model as shown in table 5, the error correction term ECM (-1) is correctly specified. It is negative and statistically significant. This means that it will be effective to correct any deviations from the long-run equilibrium. The speed of adjustment which is the coefficient of ECM (-1) is -1.137609. This shows that about 113.8 percent of short run disequilibrium adjusts back to equilibrium in the long run. This indicates that present value of the dependent variable adjusts slower to changes in the independent variables than what is obtained in the over-parameterized model. The coefficient of determination (R^2) in the parsimonious model is 0.594782. This means that about 59.5 percent of the variations in the dependent variable (RGDP) are explained jointly by the explanatory variables in the model. The F- statistic of 10.27464 with probability of 0.000030 is highly significant. The Durbin Watson statistic of 1.968196 means the absence of autocorrelation. The result of the parsimonious model shows that the coefficients of TLE (-1) is 2.533875 and is statistically significant. This value of the coefficient shows that on the average, one percent increase in the one lag period of TLE will lead to 253.4 percent increase in the current RGDP. The result also reveals that the coefficient of TLE (-2) is 1.429508 and is not statistically significant. The value of the coefficient shows that on the average, one percent increase in the two lag periods of TLE will lead to 142.9 percent increase in the current RGDP. The result equally revealed that the coefficient of NOD (-1) is -0.356953 and is not statistically significant. The value of the coefficient shows that one percent increase in the one lag period of NOD will on the average lead to 35.7 percent fall in the current RGDP.

4.1 Summary:

The impact of capital market on economic growth of Nigeria for the period 1981 – 2016 has been examined in this study. The short run regression result shows that all the capital market indices were not statistically significant except market capitalisation that was statistically significant. The result also showed that MCAP and NOD have a positive impact on the economic growth of Nigeria while TLE and VOT have a negative impact on the economic growth of Nigeria. The result of the parsimonious model showed that TLE in the one lag period has a positive impact on the RGDP and is also statistically significant. The result also showed that TLE in the one lag period has a positive impact on the current RGDP and is not statistically significant while NOD in the one lag period has a negative impact on the current RGDP and is not statistically significant. The joint effect of the explanatory variables on the dependent variable was statistically significant implying that these variables were considered important variables in explaining changes in economic growth proxied by RGDP in Nigeria within the period of study. The modeled and operationalized framework of analysis exhibited a very high explanatory power, thereby providing supporting evidence that the explanatory variables included in the model were relevant in explaining changes in economic growth (RGDP) in Nigeria within the period of study.

4.2 Conclusion:

Given that the joint effect of the explanatory variables on the dependent variable were statistically significant, the study concludes that the components of government expenditure considered in this study are important variables in explaining economic growth in Nigeria within the period of study.

4.3 Recommendations:

Based on the findings, the study recommends that government through the Central Bank of Nigeria (CBN) should introduce and implement policies that will lead to increase in listed equities as this will help to stimulate economic growth in the long run given that total listed equity in the one period lag and two periods lag have a positive impact with economic growth though it is only listed equity in the one period lag that has a significant impact on the economic growth. There is also need for government to formulate and implement policies that will increase the number of deals as this will also stimulates economic growth though it has a negative and insignificant impact with economic growth. Moreover, regulatory authorities should restore confidence in the market by ensuring that there is transparency, fair trading transactions and dealing in the market.

References

[1].   Adenusi, S.O., Sulaiman, L.A and Azeez, B.A (2013). Impact of Capital Market Development on the Nigerian Economy: A Post SAP Analysis.. *Journal of Economics and Behavioral Studies*, 5(1): pp 1-7.
[2].   Afolabi, A.A (2015). The impact of the Nigerian capital market on the economy.. *Journal of Accounting, Auditing and Finance Research*, 3(2): pp 88-96.
[3].   Akeem, U.O (2011). The Role of Capital Market on Economic Growth in Nigeria (1980 -2008). *Research Journal of Finance and Accounting*, 2(3): pp 35-57.
[4].   Anyanwu, J.C (1993). Monetary Economics: Theory, Policy and Institution. Onitsha; Hybrid Publishers Limited.
[5].   Atoyebi, K .O., Ishola, S.A; Kadiri ,K .I., Adekunjo, F .O and Ogundeji, M .O. (2013). Capital Market and Economic Growth in Nigeria an Empirical Analysis. *Journal of Humanities And Social Science*, 6(6): pp 60-68.
[6].   Edame, G and Okoro, U (2013). The Impact of Capital Market on Economic Growth in Nigeria. *Journal of Poverty, Investment and Development*, 1: pp 45 -56.

[7].   Edame, G and Okoro, U (2013). An Analysis of the Nigerian Capital Market Performance and Economic Growth in Nigeria. *Journal of Poverty, Investment and Development*, 1: pp 57 -64.
[8].   Ewah, S.O.E; Essang, A.E and Bassey, J.U (2009). Appraisal of Capital Market Efficiency on Economic Growth in Nigeria. *International Journal of Business and Management,* 4(12): pp 219 – 228.
[9].   Jhingan, M.L (2005). Monetary Economics. Delhi; Vrinda Publications Ltd.
[10].   Levy, H (1999). Introduction to investments. Ohio; International Thompson Publishing.
[11].   Mishkin, F.S (2007). The Economics of Money, Banking and Financial Markets. Boston; Greg Tobin.
[12].   Nwaolisa, E.F; Kasie, E.G and Egbunike, C.F (2013). The impact of capital market on the economic growth of Nigerian economy under democratic rule. *Arabian Journal of Business and Management Review*, 3(2): pp 53-62.
[13].   Okoye, L.U., Modebe, N.J., Taiwo, J.N and Okorie, U.E (2016). Impact of Capital Market Development on the Growth of the Nigerian Economy. *Research Journal of Financial Sustainability Reporting,* 1(1): pp 24-32.
[14].   Onwe, J.C (2015). Nigerian Capital Market and its Impact on Economy (1990 – 2013). *Nigerian Journal of Economics and Development Studies,* 1(1): pp 115-127.
[15].   Rose, P.S and Marquis, M.H (2009). Money and Capital Markets. New York; McGraw Hill
[16].   Taiwo, J.N., Adedayo, A, and Evawere, A (2006). Capital Market and Economic Growth in Nigeria. *Account and Financial Management Journa*l, 1(8): pp 497-525.
[17].   Yadirichukwu, E and. Chigbu, E.E (2014). The Impact of Capital Market on Economic Growth:: The Nigerian Perspective**.** *International Journal of Development and Sustainability*, 3(4): pp 838-864.