Long Term Financing Sources and Industrial Sector Growth: Evidence from the Nigerian Stock Market

Ogar, A. & Arikpo, O. F.
Department of Banking & Finance,
University Of Calabar,
Nigeria
arikpookafelix@yahoo.com

Abstract

This study examined the effect of long term funding sources on the growth of the industrial sector using the Nigerian capital market as a case study for the period 1981 to 2015. The study was specifically designed to assess the effect of market capitalization, volume of transaction and total new issues on the output of the industrial sector in Nigeria. The study used secondary time series data; Vector Auto Regression (VAR) method was applied to estimate the data. The result of the analysis revealed that market capitalization has an insignificant effect on the industrial sector growth in Nigeria; also, volume of transaction has an insignificant effect on the industrial sector growth in Nigeria and lastly, total new issue has an insignificant effect on the industrial sector in Nigeria. The study on the basis of these findings, recommends that the cost of raising funds from the capital market should be reduced to stimulate business to raised funds for their expansion and growth and lastly the industrial sector operators should be encouraged by the government to raised funds from the capital market for their business operations through the provision of tax incentives.

Keywords: *Industrial growth, Stock market, Market capitalization, Volume of transactions, Total new issues, Total new issues, Long term fund sources, Long term funds.*

Introduction

One of the most vibrant sectors of any economy is the real sector. This according to Arikpo and Adebisi (2017) is because of its ability to create employment opportunities, build capacity, enhance export and foreign exchange earnings and produce and distribute goods and services to meet the demand of the entire economy. According to Sanusi (2011), the real sector is the sector where goods and services are produced through the combined utilization of raw materials and other production factors such as labour, land and capital. The real sector could be categorized into agriculture, industry, building and construction, and services (Stephen & Olufemi, 2015). Agriculture can be further broken into crop production, livestock, forestry and fishing, while industry comprises crude petroleum and mineral gas, solid minerals and manufacturing. Services are made up of transportation, communication, utilities, real estate & business service, education and health (Sanusi, 2011).

The survival or otherwise of the real sector is dependent partly on its ability to access finance. Finance is the nucleus of any business as no business can survive without finance. Finance is a key ingredient that determines the growth path of a business. The availability of finance in a business determines the quality of management, employees, technology and the ability to adequately plan inputs and achieve broad organizational goals. The whole production process revolves around finance, for instance, finance is used to buy raw materials, employ labour and purchase capital equipment which aids the conversion of these raw materials into finished goods which must be sold to generate finance (Arikpo & Adebisi, 2017). Adequate

financing is therefore a relevant ingredient for building a strong industrial sector that will enhance the performance and growth of the entire real sector in Nigeria.

Business finance could be broadly classified into three: Short term finance, medium term finance and long term finance. According to Akpan (2004), long term finance describes business funds required for long term operations spanning between five and 30 years or more. Long term finance could be called permanent finance and is identified with the investment in fixed assets such as business premises, equipments and machineries which are necessary for the conduct of the routine business of the firm. The major source of long term financing in Nigeria is the Nigerian capital market. A capital market according to Udoka and Arikpo (2017) is the mechanism through which medium to long term financial resources are transferred from the surplus to the deficit economic units. Deficit economic units are real sector investors who have needs for expansion and growth. The capital market therefore provides a ready avenue for the mobilization of long term funds for business. As noted by Idowu (1993), The Nigerian capital market provides the essential facilities for companies and government to raise money for business expansion and development projects through investors who own shares in corporations for the ultimate benefit of the economy.

The Nigerian capital market as a major source of long term finance has two components: the primary market, for new capital issue by firms and other institutional investors, including governments and the secondary market, for the exchange of existing Securities (Akinsulire, 2014). It follows from the above that the Nigerian capital market, by its functional classification, plays two major roles in promoting industrialization in Nigeria. Firstly, it enables deficit investors to raise long term funds from surplus investors to finance their businesses. In fulfilling this role, it acts as primary market for new issues of equity and debt. Last, it provides a ready market for investors to sell off some shares and bonds in their portfolio or to buy additional ones to beef-up the structure of their portfolios. By so doing, it acts as a secondary market for trading on existing securities (Osinubi, 1998). In view of these roles, it becomes pertinent to examine the effect of long term finance on industrial sector growth in Nigeria using the Nigerian capital market as a point of reference.

Financing has remained the major problem of firms in Nigeria. Lack of adequate access to long term finance has been the reason for the inability of the industrial sector to acquire modern technologies necessary for growth and the use of crude method of production. The productivity capacity of the industrial sector in Nigeria has remained low with the use of crude production methods and the product of substandard commodities at high prices. This results in low patronage, low incomes, and lack of capacity to create jobs and contribute to the wellbeing of the Nigerians and the economy at large.

This problem has been compounded by the shallowness of the Nigerian capital market and the lack of institution support for long term financing of industries. The paucity of tradable shares and the global financial crises which have combined to hinder the volume of transactions, the capitalization and the efficient working of the Nigerian capital market have also hindered the capacity of firms to access long term finance. The high tax burden and lack of adequate power supply and social amenities have aggravated the woes of the industrial sector as their incomes are used to offset high tax burdens, and cover other running expenditure, thus making their products more costly than their foreign counterpart and leading to low turnover of locally made goods with its consequences on the general wellbeing of the industry. It is in view of this that this study has become timely and appropriate.

Objectives of the study

The major objective of this study is to examine the effect of long term financing on the industrial sector of Nigeria. The specific objectives of the study include to:

(i) Examine the effect stock market capitalization on the growth of the industrial sector in Nigeria;

(ii) Assess the effect stock market volume of transactions on the growth of the industrial sector in Nigeria;

(iii) Determine the effect of total new issue on the growth of the Nigerian industrial sector.

Research hypotheses

The following null hypotheses have been formulated for this study:

H_0: Stock market capitalization does not have any significant effect on the growth of the industrial sector in Nigeria;

H_0: Stock market volume of transactions does not have any significant effect on the growth of the industrial sector in Nigeria;

H_0: Total new issue does not have any significant effect on the growth of the Nigerian industrial sector.

The remainder of the paper is organized into four sections. Following section one is section two which deals with the literature review and theoretical framework, section three handles the research methodology. Section four shall present the empirical data for analyses and testing and finally, in section five the entire findings in the research process shall be summarized, conclusions drawn which will then lead us to making appropriate recommendations.

Literature Review and Theoretical Framework
Theoretical Framework

This study examined the effect of long term fund sources with special focus on the capital market on the growth of the industrial sector in Nigeria. To have an a priori view of the expected relationship among the variables of this study, the supply led finance theory and the financial repression theories will be review.

Supply Led Finance Theory

This theory was first developed by Patrick (1966), who held that finance is one of the leading aspects of economic development. Supply led finance theory is growth inducing or growth induced, which means finance is the most significant factor for promoting economic development. The provision of funds through financial institutions to support the creation, transformation, expansion of industries and developmental projects is an element of the supply led theory.

Furthermore, the supply-led finance theory can simply be described as the establishment of financial institutions in some areas before their products and services are effectively demanded. In 1976, Pius Okigbo's financial review committee in Nigeria, with respect to rural banking schemes (BS) in 1977 and the introduction of community banking system in 1990 to help encourage savings mobilization and credit expansion were direct reactions to the supply-led finance theory. In this theory, finance is regarded as a means of promoting business expansion. In this case, productive resources are often transferred from non-growth sectors to growth or modern sectors of the economy to boost entrepreneurial development in the economy. Access to supply-leading finance creates enabling financial environment for entrepreneurs to think big (Patrick, 1966).

Financial Repression Hypothesis

This is associated with the work of Mckinnon (1973) and Shaw (1973). The theory emphasizes that financial development would contribute most significantly to economic growth if the authorities were not to interfere in the operations of the financial institutions. According to the proponents of the theory, poor performance by banks and other financial institutions is thus often attributed to interest rate regulation, ceiling on deposit and loan rates and official guidelines pertaining to lending operations. Such interferences results in a low and often negative rate of return on financial assets and therefore inefficient savings mobilized and channeled into investment projects.

To this end, the theorists advocated a positive real interest rate and financial liberalization which would ensure an optimal financial structure for development as well as eliminating the fragmentation of market. It is on these premises that this study choose to base its theoretical framework on the financial repression hypothesis.

Review of Empirical Literature

Several methods have been used to examine the effect of capital market on industrial sector growth by many scholars without arriving at any consensus as to the extent to which capital market promote industrial growth in Nigeria. A review of these studies, the methodologies and findings is presented in this section.

Adam and Sanni (2005) examined the role of stock market in Nigeria's economic growth using Granger-Causality test and regression analysis. The study discovered a one-way causality between GDP growth and market capitalization and a two-way causality between GDP growth and market turnover. They also observed a positive and significant relationship between GDP growth turnover ratios. The study advised that government should encourage the development of the capital market since it has a positive relationship with economic growth.

Mohtadi and Agarwal (2004) examined the capital market and economic growth in developing countries using a panel data approach that covers 21 emerging markets over 21 years (1977 - 1997), they found that turnover ratio is an important and statistically insignificant determinant of investment by firms and that these investment in turn are significant determinant of aggregate growth. Foreign direct investment is also found to have a strong positive influence on aggregate growth. The result of their study indicates that both turnover ratio and market capitalization are important variables as determinants of economic growth.

Afees and Kazeem (2010) critically and empirically examined the causal linkage between stock market and economic growth in Nigeria between 1970 and 2004. The indicator of the stock market development used are market capitalization ratio, total value traded ratio and turnover ratio while the growth rate of gross domestic product is used as proxy for economic growth, using the Granger causality (GC) test, the empirical evidence obtained from the estimation process suggests a bidirectional causality between turnover ratio and economic growth, a uni-directional relationship from market capitalization to economic growth and no causal linkage between total value traded. The result of the causality test is sensitive to the choice of variable used as proxy for stock (capital) market. Overall the result of the G.C test suggested that capital market drive economic growth.

Arikpo and Adebisi (2017) examined the effects of deposit money banks financing on real sector output in Nigeria. They specifically assessed the effect of private sector credit, interest rate spread, deposit mobilization and banks' holding of treasury bills on trade and

agricultural sectors outputs in Nigeria. The data for the study were source from the CBN statistical bulletin for the period 1984 to 2015. The exploratory design was combined with the ex-post facto research design; the data collection method was desk survey. The study used the Vector Error Correction Mechanism (VECM) for data analysis. Findings showed that jointly, deposit money banks financing have a long term significant effect on the trade sector but does not have any long run effect on the agricultural sector in Nigeria. Also, it was revealed that there is no short run causality running from PSC, DMB, DTB and INTS to agricultural sector output; however only INTS has short run causality with trade sector output. Lastly, interest rate spread has an inverse effect on the trade sector output but a positive effect on the agricultural sector output in Nigeria.

Ikenna (2012) has employed time series data from 1970-2009 on an Autoregressive Distributed Lag (ARDL) – Based Test Model to test for the long and short run impact of financial deregulation and the possibility of a credit crunch in the real sector. The results suggest that deregulating the Nigerian financial system had an adverse boomerang effect on the credits allocated to the real sectors in the long run, and in the short run financial liberalization was in all insignificant and negative. Ikenna also concludes that Deposit Money Banks (DMBs) in Nigeria have strong discriminatory credit behaviour towards the real sector (agriculture and manufacturing) and the SMEs as credit crunch is found to be present in these sectors both in the short and long run.

Arikpo, Ogar and Ojong (2017) examined the fiscal policy on the performance of the manufacturing sector in Nigeria. The variables considered were government revenue, expenditure impact and the manufacturing output in Nigeria. The study employed the ex-post facto research design to collect time series data for the period 1982 to 2014. The data were analyzed using the ordinary least square multiple regression statistical technique. Result from the analyses revealed that increases in government revenue reduce manufacturing sector output in Nigeria. Also, increases in government expenditure enhance manufacturing output in Nigeria.

Levine and Zervos (1998) used pooled cross-country time series regression of 47 countries from 1976 to 1993 to evaluate whether stock market liquidity is related to growth, capital accumulation and productivity. They towed the line of Demiurgic- Kunt and Levine (1996) by conglomerating measures such as stock market size, liquidity and integration with world market, into index of stock market development. The rate of Gross Domestic Product (GDP) per capita was regressed on a variety of variables designed to control for initial conditions, political instability, investment in human capital and macroeconomic condition and then, included the conglomerated index of stock market development. They found empirically that the measures of stock market liquidity were strongly related to growth, capital accumulation and productivity while stock market size does not seems to correlate to economic growth.

Nyong (1997) developed an aggregate index of capital market development and used it to determine its relationship with long-run economic growth in Nigeria. The study employed a time series data from 1970 to 1994. Four measures of capital market development-ratio of market capitalization to GDP (in %), ratio of total value of transactions on the main stock exchange to GDP (in %), the value of equities transactions relative to GDP and listing were used. The four measures were combined into one overall composite index of capital market development using principal component analysis. The financial market depth was included as

control. It was found that the capital market development is negatively and significantly correlated with the long-run growth in Nigeria

Pat and James (2010) examined the impact of the Nigerian capital market on her socio-economic development from 1981 to 2008. The socio-economic development was proxy by the gross domestic product (GDP) while the capital market variables considered included market capitalization, total new issues, volume of transaction and total listed equities and Government stock. Using the ordinary least square it was found that the capital market indices have not impact significantly on the GDP

Ibi, Joshua, Eja and Olatunbosun (2015) examined the relationship between capital market and industrial sector development in Nigeria, utilizing annual time series data covering the period from 1980 to 2012. The study adopted both descriptive and analytical methodology in its investigation. The descriptive methods were used to analyze trend performances of the variables captured in the study. The analytical methodology employed modern econometric techniques such as the unit root test, co-integration test, granger causality test and the error correction mechanism (ECM) in the estimation of the relevant relationships. The results of the co-integration test showed that there existed a long run equilibrium relationship among the variables. The results of the granger causality test as presented showed that there is a bi-directional relationship between industrial output and market capitalization and between industrial output and number of deals, but a unidirectional causality relationship running from industrial sector development to value of transaction. The results of the short run dynamics revealed that capital market has positive and significant impact on industrial output in Nigeria via market capitalization and number of deals. On the other hand, value of transaction has negative and significant impact on industrial output in Nigeria during the evaluation period. The results also showed that real gross domestic product has a positive and significant impact on industrial output in Nigeria, while exchange rate and gross domestic investment have negative and significant relationship with industrial output in Nigeria.

Research Methodology

This study adopts the exploratory and ex-post facto designs. The exploratory design was used to access the relevant theories and literatures needed to provide the empirical and theoretical basis for the study. The ex-post facto design on the other hand, was applied to collect the data on the study's variables, analyze and test them. The adoption of the ex-post facto design is justified since the data used are from secondary sources meaning that the researcher cannot control the data. Both the study literature review and hypotheses testing were based on the secondary sources of data. They were extracted from the published works of various scholars in test books, articles, journals libraries internet and various other publications like the CBN statistical Bulletins.

Methods of Data Collection

Annual time series data were collected for the period 1981 to 2015 on Industrial Sector Output (NISO), Market Capitalization (MKAP), Volume of Transaction (VOT) and Total New Issues (TNI). The desk survey method was used to extract the data on the variables from the publications bearing in mind the study objectives and hypotheses. All the variables were transformed into their natural logs to ensure that their elasticity were duly captured and to control the robustness of the time series.

Techniques of Data Analyses

This study starts by analyzing the descriptive properties of the time series data to examine the structure of the time series. The study also checked the stationerity of the data by employing the augmented DICKEY Fuller (ADF) test for unit data. If the test shows a possibility that all series are integrated of I(1) then the study will employ the Vector Autoregressive techniques to estimate the relationship among the study's variables. The VAR technique places less theoretical emphasis on the structural relationship, but simply specifies a set of endogenous variables that are believed to have logical relationship and qualify for inclusion as part of the economic system.

To validate the stability of the estimates generated by the VAR model, the CUSUM test was apply. Furthermore, the study applied the Breusch-Godfrey serial correlation LM test, the normality test and the heteroskedasticity test to test whether or not the residuals of the model are interdependent. Lastly, the study applied the Wald test to assess whether or not the independent lagged variables have jointly effect on the dependent variable.

Furthermore, the study employed the impulse response function to examine the effect of one standard deviation shock on current and future values of the industrial output. It establishes the path of the dependent variables in the VAR, to shocks from all the explanatory variables. More so, the variance decomposition was used to examine the proportion of forecast error variance in each variable that is attributable to its own innovation and to the innovation from endogenous variables in the model.

Model Specification

The functional relationship between long term capital market funding and industrial sector growth has been predicted by the supply leading finance theory of Patrick (1966). This theory assumes that it is funding that triggers growth in any economy. Based on this theory, the following functional model has been developed for this study thus:

NISO = F (MKAP, VOT, TNI).. (1)

Where:

MKAP = Market Capitalization

TNI = Total New Issue

VOT = Value of transaction

NISO = Nigerian Industrial Sector Output

The above functional relationship was transformed into an unrestricted standard VAR model with lag order K, thus:

$$Y_t = ß + \sum_{t-1}^{k} ß_i Y_{t-i} + e_t$$ .... (2)

Y_t = nx1 vector of endogenous variables

$ß$ = Vector of constants

Y_{t-1} = corresponding lag term for each of the variable

e_t = vector of error terms

Data Presentation, Analyses and Discussion of Findings
Data Analyses
4.1   Descriptive statistics
Table 1
Descriptive statistics

	LNISO	LMKAP	LVOT	LTNI
Mean	6.862205	5.662205	12.01238	9.892346
Median	7.065909	5.655292	11.34964	9.395865
Maximum	9.820225	9.856260	15.07840	14.47566
Minimum	3.611334	1.609438	9.211739	5.073923
Std. Dev.	2.141665	2.978552	1.924492	2.999584
Skewness	-0.186484	0.007616	0.143322	0.135941
Kurtosis	1.661109	1.524225	1.495855	1.657305
Jarque-Bera	2.817114	3.176459	3.419234	2.736926
Probability	0.244496	0.204287	0.180935	0.254498
Sum	240.1772	198.1772	420.4333	346.2321
Sum Sq. Dev.	155.9488	301.6402	125.9248	305.9151
Observations	35	35	35	35

Source: E-views Computation, 2017

We started our analyses by appraising the statistical properties of the data. Table 2 presents the result of the descriptive statistics. From the result, it could be observed that the mean values of LNISO, LMKAP, LVOT and LTNI are respectively 6.8622, 5.6622, 12.0123 and 9.8923 with their standard deviations of 2.1416, 2.9785, 1.9244 and 2.9995 ranging respectively from 3.6113 to 9.8202, 1.6094 to 9.8562, 9.2117 to 15.0784 and 5.0739 to 14.4756.

A close examination of the skewness of the data set as shown in table 2 revealed that all the variables except LNISO were positively skewed (right skewed distribution), meaning that their means are also to the right of the peak. The coefficient of the kurtosis of the variables indicates that all the variables were platykurtic (below 3.000000) relative to the normal, meaning that the distribution produces fewer and less extreme outliers than does the normal distribution.

The JB values of 2.8171, 3.1764, 3.4192, and 2.7369 for LNISO, LMKAP, LVOT, and LTNI respectively with their respective p-values of 24.44 percent, 20.42 percent, 18.09 percent and 25.44 percent means that they are normally distributed.

4.2   Unit root test
TABLE 3
Augmented Dickey Fuller (ADF) Unit Root Test

Variables	ADF Test Statistics		Order of integration
	Level	1st Difference	
LNISO	-0.806547	-4.568066	I(1)
LMKAP	-0.256222	-4.425209	I(1)
LVOT	-1.139926	-5.799849	I(1)
LTNI	-1.048838	-6.411740	I(1)

Test critical values at level: 1% = -3.639407, 5% = -2.951125, 10% = -2.614300
Test critical values at 1st Diff: 1% = --3.646342, 5% = -2.954021, 10% = -2.615817
Source: Researchers' Eview 9.1 Computation, 2017.

Table 3 showed that LNISO, LMKAP, LVOT and LTNI had unit root at levels but after differencing one time they became stationary. This is so as their test statistics at levels, taking their absolute values were less than their critical values at 5 percent. However, after differencing one time, the test statistics, taking their absolute values became greater than their critical values at 5 percent level. To verify the validity of this result, we check the coefficient of the ADF test equation, since they are all negative; we conclude that the ADF test result is valid. Since the series are integrated of order I(1), the VAR methodology is applied for generating our estimates.

4.3   Vector Autoregression (VAR) test
TABLE 3
Vector Autoreression (VAR) Result

	LNISO	LMKAP	LVOT	LTNI
LNISO(-1)	0.648690	0.526382	-1.368825	1.473370
	(0.37207)	(0.81817)	(0.93384)	(1.82494)
	[1.74348]	[0.64336]	[-1.46580]	[0.80735]
LNISO(-2)	0.373365	0.173012	0.362710	-1.282853
	(0.30484)	(0.67034)	(0.76511)	(1.49520)
	[1.22479]	[0.25809]	[0.47406]	[-0.85798]
LNISO(-3)	-0.130963	-0.095487	0.329852	0.477086
	(0.37763)	(0.83041)	(0.94781)	(1.85224)
	[-0.34680]	[-0.11499]	[0.34802]	[0.25757]
LNISO(-4)	0.587079	0.538305	0.350503	-1.816799
	(0.33720)	(0.74150)	(0.84633)	(1.65393)
	[1.74103]	[0.72596]	[0.41414]	[-1.09848]
LNISO(-5)	0.172098	0.024325	1.208832	1.646869
	(0.34785)	(0.76493)	(0.87307)	(1.70618)
	[0.49474]	[0.03180]	[1.38457]	[0.96524]
LMKAP(-1)	-0.082567	0.630996	0.744789	-0.082050
	(0.16032)	(0.35255)	(0.40239)	(0.78637)
	[-0.51500]	[1.78979]	[1.85090]	[-0.10434]
LMKAP(-2)	-0.301202	-0.499772	-0.736071	0.078932
	(0.20092)	(0.44182)	(0.50428)	(0.98548)
	[-1.49913]	[-1.13117]	[-1.45965]	[0.08009]
LMKAP(-3)	-0.112762	0.111473	0.009743	1.124682
	(0.27171)	(0.59749)	(0.68196)	(1.33270)

	[-0.41501]	[0.18657]	[0.01429]	[0.84391]
LMKAP(-4)	0.100217	-0.315814	-0.926185	-0.351557
	(0.27517)	(0.60509)	(0.69063)	(1.34965)
	[0.36421]	[-0.52193]	[-1.34107]	[-0.26048]
LMKAP(-5)	-0.361664	-0.058679	0.443262	-0.789311
	(0.18996)	(0.41772)	(0.47677)	(0.93172)
	[-1.90391]	[-0.14047]	[0.92972]	[-0.84715]
LVOT(-1)	-0.024352	0.004022	0.362094	0.999012
	(0.14208)	(0.31243)	(0.35659)	(0.69687)
	[-0.17140]	[0.01287]	[1.01543]	[1.43358]
LVOT(-2)	-0.052742	0.005534	-0.534143	-0.405606
	(0.17483)	(0.38445)	(0.43880)	(0.85752)
	[-0.30168]	[0.01439]	[-1.21727]	[-0.47300]
LVOT(-3)	0.268309	0.501839	0.841374	0.929386
	(0.21349)	(0.46946)	(0.53583)	(1.04713)
	[1.25679]	[1.06898]	[1.57024]	[0.88756]
LVOT(-4)	0.004886	-0.180210	-0.483937	0.133639
	(0.22547)	(0.49581)	(0.56591)	(1.10591)
	[0.02167]	[-0.36346]	[-0.85515]	[0.12084]
LVOT(-5)	0.073815	0.053170	0.512166	0.214550
	(0.17087)	(0.37574)	(0.42886)	(0.83809)
	[0.43200]	[0.14151]	[1.19425]	[0.25600]
LTNI(-1)	-0.009287	0.037728	0.249352	0.294662
	(0.07385)	(0.16239)	(0.18534)	(0.36220)
	[-0.12577]	[0.23234]	[1.34535]	[0.81353]
LTNI(-2)	0.051770	0.004331	0.018590	-0.138593
	(0.06326)	(0.13912)	(0.15878)	(0.31030)
	[0.81831]	[0.03113]	[0.11708]	[-0.44664]
LTNI(-3)	0.059135	-0.011297	0.036525	-0.329594
	(0.06176)	(0.13581)	(0.15501)	(0.30293)
	[0.95747]	[-0.08318]	[0.23563]	[-1.08801]
LTNI(-4)	-0.100769	-0.085034	-0.059491	-0.042959
	(0.06887)	(0.15145)	(0.17286)	(0.33780)
	[-1.46317]	[-0.56148]	[-0.34416]	[-0.12717]
LTNI(-5)	0.086692	0.108981	-0.233912	-0.315070
	(0.06204)	(0.13642)	(0.15570)	(0.30428)
	[1.39744]	[0.79888]	[-1.50229]	[-1.03546]
C	-3.858702	-6.461064	1.187726	-10.85322
	(1.81131)	(3.98306)	(4.54616)	(8.88424)
	[-2.13034]	[-1.62213]	[0.26126]	[-1.22163]
R-squared	0.997890	0.995256	0.985465	0.977281
Adj. R-squared	0.993202	0.984714	0.953164	0.926795
Sum sq. resids	0.206500	0.998545	1.300835	4.967910
S.E. equation	0.151474	0.333091	0.380181	0.742960
F-statistic	212.8507	94.40500	30.50914	19.35748
Log likelihood	32.11166	8.471647	4.504709	-15.59518
Akaike AIC	-0.740778	0.835224	1.099686	2.439679
Schwarz SC	0.240061	1.816062	2.080524	3.420517
Mean dependent	7.387747	6.320867	12.42569	10.53155

S.D. dependent	1.837174	2.694069	1.756711	2.745973
Determinant resid covariance (dof adj.)	3.80E-05			
Determinant resid covariance	3.08E-07			
Log likelihood	54.62159			
Akaike information criterion	1.958561			
Schwarz criterion	5.881913			

Source: E-view Computation, 2017

Table 3 is the result of the VAR estimate with four equations, our equation of interest however is equation one (were LNISO the endogenous variable). From the table above, we have the standard deviation and t-statistics but we don't have their p-values, hence, we generated a system equation using our VAR equation of interest. The result is presented in table 4 below.

TABLE 4

Dependent Variable: LNISO

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.648690	0.372066	1.743478	0.1152
C(2)	0.373365	0.304841	1.224786	0.2517
C(3)	-0.130963	0.377632	-0.346800	0.7367
C(4)	0.587079	0.337201	1.741033	0.1157
C(5)	0.172098	0.347855	0.494741	0.6326
C(6)	-0.082567	0.160324	-0.515000	0.6190
C(7)	-0.301202	0.200918	-1.499131	0.1681
C(8)	-0.112762	0.271710	-0.415006	0.6879
C(9)	0.100217	0.275166	0.364206	0.7241
C(10)	-0.361664	0.189959	-1.903910	0.0893
C(11)	-0.024352	0.142076	-0.171400	0.8677
C(12)	-0.052742	0.174831	-0.301676	0.7698
C(13)	0.268309	0.213487	1.256793	0.2405
C(14)	0.004886	0.225472	0.021672	0.9832
C(15)	0.073815	0.170869	0.431995	0.6759
C(16)	-0.009287	0.073846	-0.125766	0.9027
C(17)	0.051770	0.063264	0.818315	0.4343
C(18)	0.059135	0.061761	0.957472	0.3633
C(19)	-0.100769	0.068870	-1.463169	0.1774
C(20)	0.086692	0.062036	1.397442	0.1958
C(21)	-3.858702	1.811310	-2.130338	0.0620

|			
R-squared	0.997890	Mean dependent var	7.387747
Adjusted R-squared	0.993202	S.D. dependent var	1.837174
S.E. of regression	0.151474	Akaike info criterion	-0.740778
Sum squared resid	0.206500	Schwarz criterion	0.240061
Log likelihood	32.11166	Hannan-Quinn criter.	-0.426999
F-statistic	212.8507	Durbin-Watson stat	2.249070
Prob(F-statistic)	0.000000		

Source: E-view Computation, 2017

The above table represents the VAR system equation of our equation of interest where LNISO is the dependent. From the result, the R^2 value of 0.9978 show that about 99.78 percent of the changes in the industrial output have been explained by the joint variation in market capitalization, volume of transaction and total new issues. Furthermore, the F-Statistics value of 212.8507 with it corresponding p-value less than 5 percent showed that the model is highly significant. With this result, we proceeded to test for the stability of the model using CUSUM test

4.3 Stability test
FIGURE 1
CUSUM test for Stability
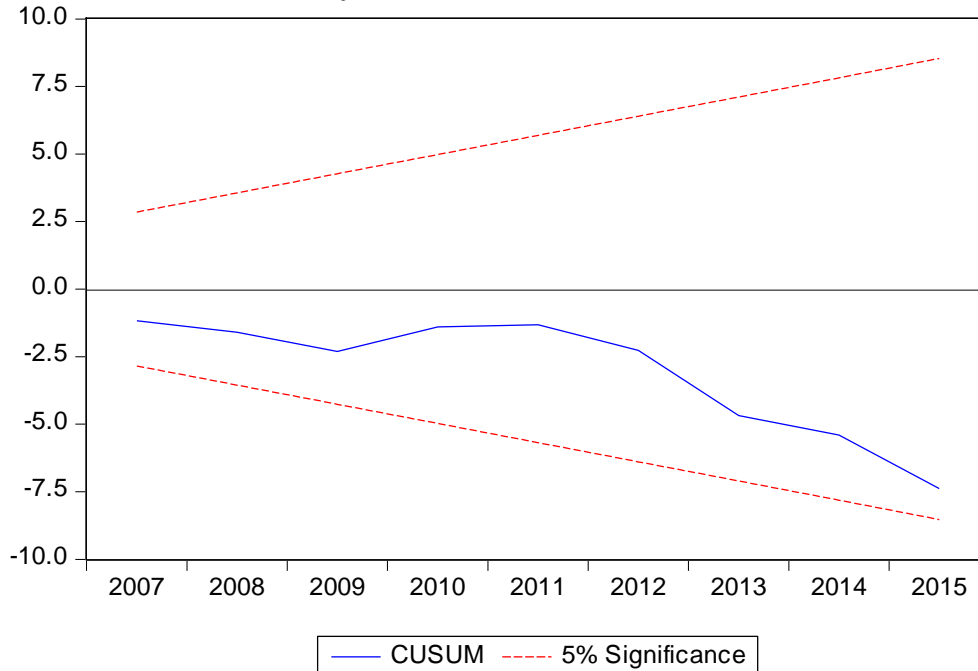
Source: E-views 9 computation, 2017

From the above result, it could be seen that the blue line lies in between the two red lines. This means that the estimates of our model are stable and reliable.

FIGURE 2
Histogram Normality test
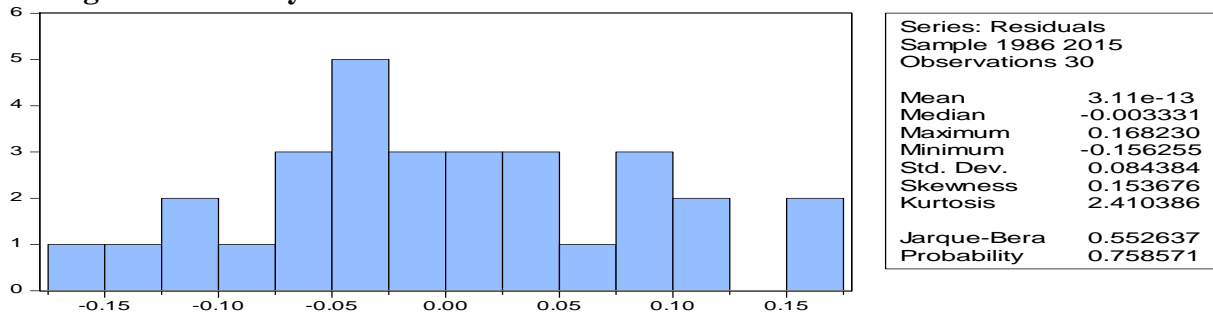
Source: E-view Computation, 2017

The Jarque Bera statistics of 0.552637 with it corresponding probability of 55.28 percent, more than 5 percent, means that the residual of the model is normally distributed.

TABLE 5
Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.804181	Prob. F(5,4)	0.2937
Obs*R-squared	20.78405	Prob. Chi-Square(5)	0.0009

Source: E-view 9 Computation, 2017.

Checking the observed R^2 value of 20.78405 with it corresponding prob. Chi-square value of 0.0009 percent, we conclude that the model is not free from serial correlation.

TABLE 6
Heteroskedasticity Test: Brueusch-Pagan-Godfrey

F-statistic	1.504055	Prob. F(20,9)	0.2696
Obs*R-squared	23.09129	Prob. Chi-Square(20)	0.2843
Scaled explained SS	1.465544	Prob. Chi-Square(20)	1.0000

Source: E-views 9 Computation, 2017.

From the table the observed R^2 value of 23.09129 with it corresponding prob. Chi-square value of 28.43 percent, more than five percent, implies that the model is free from heteroskedasticity, in other words, the model is homoskedastic.

TABLE 7:
Causality Using Wald Test

Dependent Variable: GDP (Output)

Variables Tested	Null Hypotheses	F-Stats	Prob.
LMKAP	C(6)=C(7)=C(8)=C(9)=C(10)=0	1.9507 5	0.180 9
LVOT	C(11)=C(12)=C(13)=C(14)=C(15) =0	0.7729 5	0.592 5
LTNI	C(16)=C(17)	1.1325 5	0.409 3
	C(18)=C(19)=C(20)=0		

*Represents rejection of null hypotheses at 5 percent level
Source: Eview 9.1 Computation, 2017.

Table 7 show that the null hypotheses for all the variables was not rejected, meaning that there is a no causality running from market capitalization, volume of transaction and total new issues to industrial sector output in Nigeria. In other words, long term financing does not have any significant effect on the growth of the industrial sector in Nigeria.

4.4   Impulse response function
FIGURE 3
Response to Cholesky One S.D. Innovations ± 2 S.E.
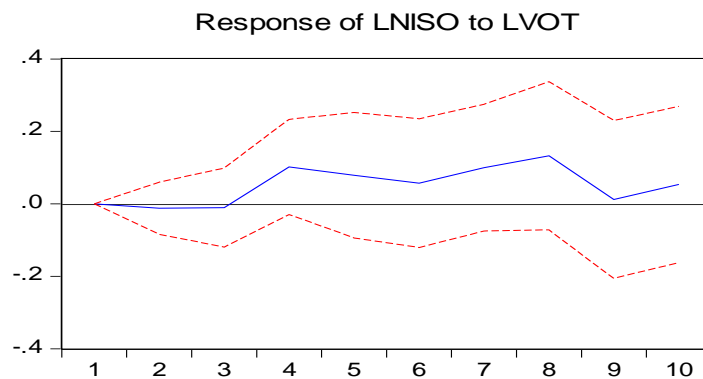
Response of LNISO to LMKAP
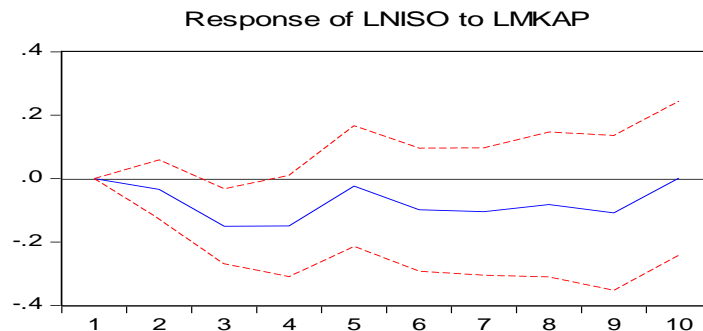
Source: E-view Computation, 2017

From figure 3 above, a one standard deviation innovation in market capitalization led to a decrease in industrial output to the quarter three, and then, a short increase towards the origin that started in quarter four and ended at quarter five without touching the origin. At period five, an innovation in market capitalization led to a decrease further in industrial sector output to period nine and then a sharp increase that touched in industrial sector output the origin at period ten. This implies that innovations market capitalization exerts negative shocks on industrial sector output, in other words, increases in market capitalization, trigger negative development on industrial sector output in Nigeria as against theoretical predictions.
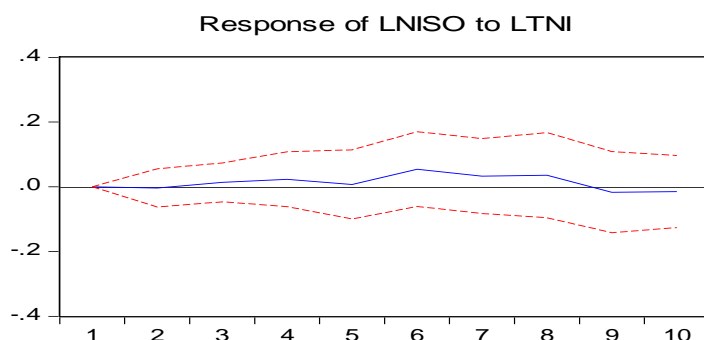
FIGURE 4
Response to Cholesky One S.D. Innovations ± 2 S.E.

Response of LNISO to LVOT

Source: E-view Computation, 2017

From figure 4 above, a one standard deviation innovation in volume of transaction led to an increase in industrial output from quarter three, to quarter four, continuous innovation in volume of transaction led to a small slow decrease in industrial sector output to quarter six and then an increase to period eight where it peaked and then fell to period nine and increased again till it gets to period ten. This implies that innovations volume of transaction exerts positive shocks on industrial sector output, in other words, increases in volume of transaction, trigger positive shocks on industrial sector output in Nigeria as theoretically expected.

FIGURE 5

Response to Cholesky One S.D. Innovations ± 2 S.E.

Response of LNISO to LTNI

Source: E-view Computation, 2017

From figure 5 above, a one standard deviation total new issues led to an insignificant increase in industrial output from quarter three, to quarter six where it started falling slowly it reached the origin at the second quarter of period eight and then assumed negative values till the end. This implies that innovations total new issues have insignificant positive shocks on industrial sector output to period eight and then negative effects till the end. This implies that total new issues have mixed effect on industrial sector output in Nigeria.

4.5   Variance decomposition
TABLE 7:
Variance decomposition of LNISO, LMKAP, LVOT and LTNI

Variance Decomposition of LNISO

Period	S.E.	LNISO	LMKAP	LVOT	LTNI
1	0.151474	100.0000	0.000000	0.000000	0.000000
5	0.334839	42.67980	41.57388	15.04171	0.704614
10	0.460279	32.61663	40.33352	23.93015	3.119703

Variance Decomposition of LMKAP

Period	S.E.	LNISO	LMKAP	LVOT	LTNI
1	0.333091	3.802893	96.19711	0.000000	0.000000
5	0.514277	18.48401	60.71753	20.32520	0.473257
10	0.669788	14.95340	54.22106	27.57265	3.252887

Variance Decomposition of LVOT

Period	S.E.	LNISO	LMKAP	LVOT	LTNI
1	0.380181	0.215373	32.39326	67.39137	0.000000
5	0.693703	5.541133	44.13857	46.40777	3.912527
10	0.907666	6.708037	53.71266	34.49819	5.081119

Variance Decomposition of LTNI

Period	S.E.	LNISO	LMKAP	LVOT	LTNI
1	0.742960	17.50156	8.032538	45.58027	28.88563
5	1.313632	17.47065	30.19468	41.82636	10.50831
10	1.704274	14.30459	45.72394	31.10138	8.870087

Source: E-view Computation, 2017

From the above table it could be noticed that the variance decomposition of LNISO is completely explained by its own movements in the first period. In the fifth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 42.67 percent, 41.57 percent, 15.04 percent and 0.71 percent to the changes in LNISO. In the tenth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 32.61 percent, 40.33 percent, 23.93 percent and 3.12 percent to the changes in LNISO. In all, LNISO has the highest contribution to its own movements.

Again, it could be noticed that about 96.20 percent of the changes in MKAP is explained by its own innovations in the first period. The remaining 3.80 percent is explained by LNISO. In the fifth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 18.48 percent, 60.72 percent, 20.32 percent and 0.47 percent to the changes in LMKAP. In the tenth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 14.95 percent, 54.22 percent, 27.57 percent and 3.25 percent to the changes in LMKAP.

More so, it could be seen that about 67.39 percent of the changes in VOT is explained by its own innovations in the first period. The remaining 32.63 percent is explained by LNISO (0.22 percent) and LMKAP (32.39 percent). In the fifth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 5.54 percent, 44.13 percent, 46.41 percent and 3.91 percent to the changes in LVOT. In the tenth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 6.71 percent, 53.71 percent, 34.49 percent and 5.08 percent to the changes in LVOT.

Lastly, it could be seen that about 28.88 percent of the changes in LTNI is explained by its own innovations in the first period. The remaining 71.12 percent is explained by LNISO (17.50 percent), LMKAP (32.39 percent) and LVOT (45.58 percent). In the fifth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 17.47 percent, 30.19 percent, 41.82 percent and 10.51 percent to the changes in LTNI. In the tenth period, LNISO, LMKAP, LVOT and LTNI respectively contributed 14.30 percent, 45.72 percent, 31.10 percent and 8.87 percent to the changes in LTNI.

TEST OF HYPOTHESES
Hypothesis one
H0: Stock market capitalization does not have any significant effect on the growth of the industrial sector in Nigeria;

H1: Stock market capitalization has a significant effect on the growth of the industrial sector in Nigeria.

Decision Rule
Accept H0: if calculated F-statistics value > table F-statistics value.'
Reject H0: if calculated F-statistics value < table F-statistics value.
From the regression result,

Table F-statistics value = 1.95
Calculated F-statistics value   = 2.14

Since the calculated F-statistics value of 1.95 is less than the table F-statistics value of 2.14 at 5 percent level of significance, we reject the alternative hypothesis and accept the null hypothesis. It therefore implies that stock market capitalization does not have any significant effect on the growth of the industrial sector in Nigeria.

Hypothesis two
H_0:   Stock market volume of transactions does not have any significant effect on the growth of the industrial sector in Nigeria;
H_1:   Stock market volume of transactions has a significant effect on the growth   of   the industrial sector in Nigeria.

Decision Rule
Accept H_0: if calculated F-statistics value > table F-statistics value.'
Reject H_0: if calculated F-statistics value < table F-statistics value.
From the regression result,
Table F-statistics value = 2.14
Calculated F-statistics value   = 0.77

Since the calculated F-statistics value of 0.77 is less than the table F-statistics value of 2.14 at 5 percent level of significance, we reject the alternative hypothesis and accept the null hypothesis. It therefore implies that stock market volume of transaction does not have any significant effect on the growth of the industrial sector in Nigeria.

Hypothesis three
H_0:   Total new issue does not have any significant effect on the growth of the Nigerian industrial sector;
H_1:   Total new issue has a significant effect on the growth of the Nigerian industrial sector.

Decision Rule
Accept H_0: if calculated F-statistics value > table F-statistics value.'
Reject H_0: if calculated F-statistics value < table F-statistics value.
From the regression result,
Table F-statistics value = 1.13
Calculated F-statistics value   = 2.14

Since the calculated F-statistics value of 1.13 is less than the table F-statistics value of 2.14 at 5 percent level of significance, we reject the alternative hypothesis and accept the null hypothesis. It therefore implies that stock market total new issue does not have any significant effect on the growth of the industrial sector in Nigeria.

Discussion of Findings
The results of the analysis revealed that market capitalization, volume of transactions and total new issues have insignificant effects on industrial sector growth in Nigeria. This implies that market capitalization, volume of transactions and total new issues have small and negligible influences on the industrial sector productivity in Nigeria. In other words, the Nigerian capital market has not supported industrial sector growth within the period of this study. Started differently, long term funding in Nigeria is not effective enough to promote growth in industry and trigger economic growth. This finding negates the findings of Ibi, Joshua, Eja and Olatunbosun (2015) who using ECM to study the effect of capital market on industrial sector growth found evidence of a significant relationship from capital market to the

industrial sector. These findings also negate the findings of Afees and Kazeem (2010) in their study on the causal linkage between stock market and economic growth in Nigeria between 1970 and 2004. Using the Granger causality (GC) test, obtained evidence of a bidirectional causality between turnover ratio and economic growth, a uni-directional relationship from market capitalization to economic growth and no causal linkage between total values traded. The result of the causality test is sensitive to the choice of variable used as proxy for stock (capital) market. Overall they concluded that capital market drive economic growth.

Summary and Conclusion of Findings and Recommendations
Summary and Conclusion

This study examined the effect of market capitalization, volume of transaction, and total new issues on industrial sector growth in Nigeria using Vector Auto Regressive (VAR) technique. The study showed an insignificant effect of market capitalization, volume of transaction, and total new issues on industrial sector growth in Nigeria. From the above findings, the study concludes that long term funding sources has negligible effect on the growth of the Nigerian industrial sector.

Recommendations

Based on the above findings the following recommendations were made:
(i) The cost of raising funds from the capital market should be reduced to stimulate business to raised funds for their expansion and growth
(ii) Industrial operators should be encouraged by the government to raised funds from the capital market for their business operations through the provision of tax incentives.

Reference
Abdulkadir, A. (1981). *Financing industrial development in Nigeria*. Business Times Newspaper, 16
Adamu, J. A. and Sanni. I. (2005). Stock market development and Nigerian economy growth. *Journal of Economic and Allied Field 2(2), 116-132.*
Adebiyi, M. A. (2005). Capital market performance and the Nigerian economic growth. In: OF Oluwatayo, A Olasupo (Eds.): *Issues in Money, Finance and Economic Management*. Lagos: University of Lagos.
Adetunji, W. (1997). *Securities and Exchange Commission: Capital markets investment opportunities and risk*. Paper Presented at a Public Service Forum, held at Cultural Centre, Kuta Abeokuta Daily Champion July 21, 26
Adeyemi, K. S. (1998). Option for effective development of Nigeria Capital Market. A one day seminar organized by Nigeria *Economic Society at the Institute of International Affairs,* Lagos 21st January 1998.
Afees, A. S. & Agarwal, B. K. (2010). The stock market and economic growth in Nigeria: An empirical investigation, *Journal of Economic Theory,* 4, 65 – 70.
Akamiokhor, G. (1984). The Securities and Exchange Commission and the Nigerian Capital Market. *Central Bank of Nigeria Bullion, 2,* 70-77
Akingbohungbe, S. S. (1996). The role of financial sector in the development of the Nigerian Economy: *A paper presented at a Workshop organized by the Centre for African Law and Development Studies.*
Akinsulire, O. (2014). *Financial management (8th Ed.).* Lagos: El-Toda Venture Ltd.
Akpan, I. (2004). *Fundamentals of finance (2nd Ed.).* Uyo: Nelgrafik Press.
Al-FakI M 2006. The Nigerian capital market and socioeconomic development. *Paper*

presented at the 4*th* Distinguished Faculty of Social Science Public Lecture,University of Benin, 9-16 .

Alile, H. I. & Anao, R. A. (1986). *The Nigerian stock market in operation*. Lagos: Jeromelaiho and Associate Limited.

Arikpo, O. F., & Adebisi, A. W. (2017). Deposit money banking financing and its effect on real sector output in Nigeria: Evidence from trade and agricultural sectors. *Advances in Social Sciences Research Journal, 4(14)* 22-37, DOI:10.14738/assrj.414.3433.

Arikpo, O. F., Ogar, A. & Ojong, C. M. (2017). The impact of fiscal policy on the performance of manufacturing sector in Nigeria. *Euro-Asian Journal of Economics and Finance,* 5 (1), 11-22. DOI: 10.9790/5933-07113238.

Chris O. U. & Arikpo, O. F. (2017). Foreign direct investment and capital market development in Nigeria. International Journal of Advance and Innovative Research, 4 (2), 42-70

Dada, I.O (2003). *The Nigeria capital market: Development, issues and policies.* Ibadan Spectrum Books Limited

Demirgue-Kunt, A. & Levin, R. (1996). Stock market development and financial intermediaries: Stylized facts. *The World bank Economic Review,* 10(2), 241-265.

Enuenwosu, C. E. & Nemedia, C. E. (1980). Policies and strategies towards foreign investment in Nigeria. *CBN Economic and Financial Review* 18 (1)

Hughes J. R (1973). Industrialization economic aspect in David L.

Ibi, E. E., Joshua, N. J., Eja, B. R. & Olatunbosun, H. U. (2015). Capital market and industrial sector development in Nigeria- an empirical investigation. *European Journal of Accounting Auditing and Finance Research,* 3(6), 63-79

Idowu, O. S. (1993). *Effects of structural adjustment programme on employment in manufacturing sector.* In Economic Reform Policies and Labour Market in Nigeria, edited

Ikenna, O.D. (2012). Financial deregulation bounding to credit mobilization in Nigeria: A case for the real sectors and SMEs. *IOSR Journal of Humanities and Social Science,* 5(5), 40-59.

Inanga, I. L. & Emenuga, C. (1997). Institutional traditional and asset pricing characteristics of Nigerian Stock Exchange. *African Economic Consortium Research Paper 60, March 1997*

Iyorha, M. A. & Drejomaob, V. P (1978). *Industrialization in the Community of West Africa States*. Heinemann Educational Books (Nig) Ltd

Killy, P. (1960). *Indoctrination in an open economy: Nigeria 1945 – 1960.* Cambridge University Press

Levine R. & Zervos, S. (1998). Stock market development and long–run growth. *American Economic Review,* 88 (3), 537- 558.

Lewis, A. (1986). *The theory of economic growth: The growth output per head of population*. London: Allen and Unwin.

Mahtadi, H. and Agarwal, S., (2001). Stock Market Development and Economic Growth: Evidence from Developing Countries. http://www.articlesbase.com/finance-articles/stock-market-development-and-economic-growth-evidence-from-underdeveloped-nation-nepal-1096815.html

Mckinnon, R. I. (1973). *Money and banking in economic development: An empirical examination.* Washington D. C: The Brookings Institute.

Nwankwo, G. O. (1985). *The Nigerian financial system*: London and Basing Stock; Macmillan Publishers Ltd.

Nyong, M. O. (1997). Capital market development and long run economic growth: Theory, evidence and analysis, *First Bank Review,* 13-38.

Okereke-Onyiuke, N. (2000). Stock market financing options for public projects in Nigeria. *The Nigerian Stock Exchange Fact Book,* 41 – 49.

Osaze, B. E. (1995). Paradigm shift, misplaced concreteness and the Nigerian financial system. *Inaugural Lecture Series, 41* University of Benin, 40-41.

Osinubi, T. S. (1998). Stock market development and long run growth in Nigeria. Unpublished M.Sc Economics Dissertation, University of Ibadan, Nigeria.

Pandey, I. M. (2002). *Financial management*: Vijay Nicole Imprints, Aminjikar Chennai

Pat, D. and James, O. (2010). An empirical analysis of the impact of the Nigerian capital market on her socio-economic development. *Journal of Social Science*, 24(2), 135-142

Patrick, H. (1966). Financial development and economic growth in underdeveloped countries. *Economic Development and Cultural Change*, 174-189.

Sanusi, S. L. (2011). *Growing Nigeria's real sector for employment and economic development: The role of Central Bank of Nigeria*. Paper Delivered at the Inaugural Memorial Lecture in Honour Of Late Professor Okefie Uzoaga held on July, 12 at University of Nigeria, Nsukka, Enugu State.

Shaw, E. S. (1973). *Financial deepening in economic development*. New York: Oxford University Press.

Soludo, C. C. (2006). Can Nigeria be the China of Africa? *Lecture Delivered at the University of Benin Founders' Day,* 14.

Stephen, O. A. & Olufemi A. A. (2015). Relevance of financial sector development on real sector productivity: 21st century evidence from Nigerian industrial sector. *International Journal of Academic Research in Business and Social Sciences, 5(6), 118-132,* DOI: 10.6007/IJARBSS/v5-i6/1661

Sule, O. K., & Momoh, O. C. (2009).The impact of stock market earnings on Nigeria per capita income. *African Journal of Accounting, Economics, Finance and Banking Research,* 5(5), 77-89.

Tokunbo, S. O. & Lioyd, A. A. (2010). Foreign private investment and economic growth in Nigeria. *Applied Econometrics and International Development, 10 (2),* 189-204.