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Capital Market Performance and Sectoral Output Growth in Nigeria (1984-2018)

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ABSTRACT

This study was carried out to investigate the effects of capital market performance on sectoral output growth in Nigeria within a temporal scope 1984-2018. The study was anchored on Ayodeji-Ajala (2018) capital market economic significance theorem; and as such, the independent variable, capital market performance, was measured by seven indicators, which are all-share index, market capitalization, number of listed equities, number of deals, stock market turnover, value of deals and value of transactions. However, to measure the dependent variable, sectoral output growth, five different models were developed, such that their respective dependent variables are contribution of agricultural sector to Gross Domestic Product (GDP), contribution of industrial sector to GDP, contribution of construction sector to GDP, contribution of trade sector to GDP, and contribution of service sector to GDP. With respect to these proxies, the study sourced annualized time-series data from the capital market bulletins of the Nigerian Securities and Exchange Commission and the statistical bulletins of the Central Bank of Nigeria, and estimated them using auto regressive distributed lad model. The study found that, on the effects of capital market performance on agricultural sector output, ASI, MCAP, VTRAN and NLE exerted significantly positive long-run effects on agricultural sector output in Nigeria. It, also, found that, on the effects of capital market performance on industrial sector output, MCAP and NOD exerted significantly positive long-run effects on industrial output in Nigeria. It, further, found that, on the effects of capital market performance on construction sector output, only MCAP exerted significantly positive long-run effects on construction sector output in Nigeria. Moreover, it found that, on the effects of capital market performance on trade sector output, only MCAP exerted significantly positive long-run effects on trade sector output in Nigeria while ASI, VTRAN and NOD exerted insignificantly positive long-run effects on it. Lastly, it found that, on the effects of capital market performance on service sector output, none of the capital market performance indicators exerted significantly positive long-run effects on

service sector output in Nigeria. The study concluded that, capital market performance exerts heterogeneous long-run effects on sectoral output. It was, therefore, recommended that, government, at all levels, should focus more on agricultural development initiatives and strategies, as the sector manifests high tendency to respond significantly positively to capital market incitements in the long-run, much more that the sector is the largest employer of labour in Nigeria. Also, more government efforts, resources and attention should be geared toward the upgrading of market infrastructure, and toward the sanitization of Nigeria's capital market against market infractions and insider abuses so as to boost the efficiency and liquidity performance of the market so that its effects can be noticeably felt on the industrial, construction, trade and service sectors of the economy.

Keywords: Capital Market Performance, Sectoral Output, Market Capitalization, All-Share Index

INTRODUCTION

Sectoral performance, or better still, performance of individual sectors is the fulcrum for general economic performance. This is due to the fact that, the combined outputs of individual sectors of the economy make up the national output, called gross domestic product, which is the commonest measure of national income and economic growth: for, economic growth is the rate of increase in in the national output over time.By the name National Chamber of Commerce, Industry, Mines and Agriculture (NACCIMA), it is suggestive that, the Nigerian economy is divided into four sectors; namely, commercial sector, industrial sector, mining sector, and agricultural sector. However, the various editions of the Central Bank of Nigeria (CBN) Statistical Bulletin have classified the Nigerian economy into five sectors; namely, agricultural sector, industrial sector, construction sector, trade sector, and service sector. As such, gross domestic product has been estimated as the addition of the outputs of all these five sectors.

For a sound and stable economic performance, each sector of the economy requires adequate long-term finance, which is provided by the capital market within the ambit of the financial sector. This accounts for why Briggs (2015) noted that, the development of the financial sector closely tracks economic transformation. A well-developed financial system mobilizes and pools savings, facilitates the exchange of goods and services, and allows the diversification and management of risk. These functions influence savings and investment decisions as well as technological innovations and, hence, economic growth.By this, the performance

of the capital market is expected to exert significant influence on both sectoral and general economic performance. As such, capital market indices, or better still, capital market performance indicators, would foster economic performance in each sector of the economy, and, in turn, engender economic growth. A theoretical link between capital market and economic performance was provided by the capital market economic significance theorem of Ayodeji and Ajala (2018_a), which states that, efficiency, funds mobilization, liquidity and wealth creation capacity of the capital market exerts perceptible positive pull on economic growth.

This led to the development of an all-inclusive model of capital market performance, such that, the efficiency capacity was represented by all-share index; funds mobilization capacity was measured by market capitalization and number of listed securities/ equities; liquidity capacity was proxied by number of deals and stock market turnover; and wealth creation capacity was represented by value of deals and value of transactions. In essence, the model explored seven capital market performance indicators; such exploration was a significant improvement on the hitherto existing models that only considered two or three capital market indices, and which did not consider all the four areas of capital market performance in a single model. Previous studies that fall in this category include those of Saka (1988), Bashorun and Bakare-Aremu (2013), and Obiakor (2016).

Essentially, the all-inclusive model of Ayodeji and Ajala (2018_a) related the seven capital market performance indicators to growth in economy-wide output, that is, aggregate output growth, called economic growth. However, there is the need to examine the effects of capital market performance on sectoral output growth in Nigeria. This would reveal the degree of responsiveness of each of the five sectors of the economy to capital market performance incitements, so that appropriate measures can be taken to further stimulate any sector(s) with low sensitivity to capital market performance in order to foster significant economic growth that would lead to higher per capita income, that is, better living standard in the country.

Though some studies worked on capital market performance in relation to one sector of the economy, there is dearth of literature on the consideration of the effects of capital market performance on each of the five sectors in a single study. Even, existing

studies on one-sector model did not explore all the seven capital market performance indicators in their respective models; and as such, they did not capture all the four areas of capital market performance. Studies in this light include those of Uwajumogu, Ogbonna, Chijoke and Agwu (2013), Ibi, Joshua, Eja and Oluwatunbosun (2015), Seharawat and Giri (2017), Offum and Ihuoma (2018),and Eze, Atuma and BigBen (2019). This study was, therefore, initiated to investigate the effects of capital market performance on sectoral output growth in Nigeria within a temporal scope 1984-2018.

CONCEPTUAL CLARIFICATION

Capital Market and Capital Market Performance

Ekezie (2002) defined capital market as a market for dealings (i.e. lending and borrowing) in long-term loanable funds. This assertion reflects the fact that, the capital market provides the fulcrum for lending and borrowing between the surplus and deficit sectors of the economy for development purposes, which is a direct indication of the financial intermediation function of a capital market. Ekezie's assertion portended that, capital market provides the medium for exchange of values between two parties (the surplus and the deficit sectors). The values exchanged are in the form of long-term securities for cash, whereby the borrower (borrowing company or government) issues out its long-term financial instruments to the lending public (the investing individuals, companies and governments) in exchange for cash. These securities are shares, debentures, corporate bonds, government bonds and government development stocks. While shares are otherwise referred to as equity instruments, other securities are generally called debt instruments. In the same vein, Abdulahi (2005) stated that, capital market provides for buying and selling of long-term debt or equity-backed securities. However, both Ekezie and Abdulahi forgot to consider the fact that, medium-term funds are also pooled from the capital market.

In his own opinion, Osannwonyi (2005) stated that, capital market is an exchange system set up to deal in long-term credit instruments of high qual*it*y. The dealing in this high quality instruments facilitates the execution of some desirable and profitable projects bearing direct relationship with economic development. This definition tows the same line of thought with Ekezie's by stating that, capital market is an exchange system dealing in long-term instruments without considering medium-term funds. However, the area of divergence is that,

Osannwonyi sees it that, the instruments traded in the capital market are of high quality, meaning that they are highly standardised whereas Ekezie does not. More importantly, seeing the capital market as a set up implies that, it is an organized system with goals, structures and rules.By this, the area of convergence between the former and the latter views is that, capital market is a constellation of financial institutions for pooling funds for development purposes.

Edame and Okoro (2013) gave the relevance of capital markets to economic growth as follows: First, capital market performance/ development increases the proportion of savings that is funnelled to investments. Second, capital market development may change the savings rate and, hence, affect investments. Third, capital market development increases the efficiency of capital allocation. These points can be circumscribed into savings-investment transformation between capital market and the economy, such that the savings mobilized by the capital market are efficiently transformed into productive investments by the different sectors of the economy. Based on these postulations and assertions, Nwaolisa, Kasie and Egbunike (2013) submitted that, the capital market, no doubt, is pivotal to the level of growth and development of the economy.According to Ayodeji and Ajala (2018_a), capital market performance defines the functioning and efficiency of the capital market in playing its traditional roles of medium to long term mobilization of funds, creating liquidity of capital investments, and moving the surplus and deficit sectors close to utility maximization.

Economic Growth and Sectoral Output Growth

Olofin and Salisu(2014) defined economic growth as increases in a country's production or income per capita. Production is usually measured by Gross National Product (GNP) or Gross National Income (GNI), used, interchangeably, to quantify an economy's total output of goods and services. The beauty of this definition is the consideration of Gross National Product (GNP) or national income from two different approaches – the product approach and the income approach. It, also, measures economic growth from the standpoint of national output (i.e. gross national product), national income (gross national income) and per capita income.

However, to Ayodeji and Ajala (2018_b), economic growth, that is, GDP growth, is the combined growth in the contributions of activity sectors to gross domestic product.

To this extent, GDP growth is the addition of agricultural output growth, industrial output growth, construction sector output growth, trade sector activity growth, and service sector activity growth. Therefore, sectoral output growth is the continuous increase in the contribution of each sector of the economy to gross domestic product.

THEORETICAL FRAMEWORK:

Capital Market Economic Significance Theorem

This study was anchored on the threshold of capital market economic significance theorem, which was developed by Ayodeji and Ajala (2018_a) as an extension of endogenous growth theory. This theorem states that, market capitalization,all-share index, number of listed equities, number of deals, value of deals, value of transactions and stock market turnover would exert significant positive effects on economic growth, as they measure efficiency, funds-mobilization, liquidity and wealth creation capacity of the capital market.

By this theorem, capital market efficiency is represented by All Share Index (ASI); funds mobilization capacity is measured by Market Capitalization (MCAP) and Number of Listed Equities (NLE); liquidity capacity is proxied by Number of Deals (NOD)and Stock Market Turnover (SMT); and wealth creation capacity is represented by Value of Deals (VOD) and Value of Transactions (VTRAN). The theoretical model was given by GDP = f (MCAP, ASI, NLE, NOD, VOD, VTRAN, SMT). This signifies that, gross domestic product is a function of (or is dependent on) the proxies of capital market performance.

EMPIRICAL REVIEW

Capital Market and Economic Growth

Bashorun and Bakare-Aremu (2013) assessed the link between capital market development and economic growth in Nigeria within a time frame 1981-2011. The study sourced secondary data from the Central Bank of Nigeria (CBN) statistical bulletin, Nigerian Stock Exchange fact book, and Securities and Exchange Commission data base. It proxied economic growth by real gross domestic product, and capital market development by market capitalization, all-share index and number of deals. The study applied co-integration and error correction modelling as estimation techniques, and found that, all-share Index, number of deals and market capitalization have individual positive and significant combined impact on economic growth. It, also, found a unidirectional causality

running from capital market to economic development and feedback causality between market capitalization and economic growth, thus validating the endogenous growth theory.

Also, Obiakor (2016) examined capital market-economic growth nexus in Nigeria-Africa's largest economy within a time scope 1985-2015. The study proxied economic growth by gross domestic product (GDP), while capital market indices employed were market capitalisation, value of transactions, and all-share index. It employed ordinary least squares method of analysis to estimate the time-series data, and found that, market indices had heterogeneous effects on economic growth in Nigeria. It, also, found, on the aggregate, that, capital market development significantly induced economic growth in Nigeria within the study period, as the overall model was statistically significant.

Indicatively, Seharawat and Giri (2017) conducted a sectoral analysis of the role of stock market development on economic growth in India within a time dimension 2003-2014. The study developed three sector-specific models, such that the three different dependent variables were manufacturing sector share in GDP, electricity, gas and water sector share in GDP, and service sector share in GDP. It used the sector-specific stock index as independent variable in each of the three models. It, also, employed crude oil price, real exchange rate, T-bill rates, trade openness, and wholesale price index as control variables. It sourced quarterly time-series data from 2003:Q4 to 2014:Q4 from Handbook of Statistics on Indian Economy, and official website of Stock Exchange Board of India (SEBI), and estimated them using auto regressive distributed lag model. The study found both long-run and short-run relationship between sector-specific GDP and sector-specific stock indices. It, also, found a unidirectional long-run causality between sector-specific stock prices and their respective sector GDP, running from the former to the latter.

Essentially, Ayodeji and Ajala (2018_a) examined the contributions of capital market performance to economic growth in Nigeria within the temporal scope 1984-2016. The study represented economic growth by gross domestic product, and measured capital market performance by market capitalisation, all-share index, number of listed equities, number of deals, value of deals, value of transactions, and stock market turnover. It sourced time-series data from the capital market bulletins of the

Nigerian Securities and Exchange Commission and the statistical bulletins of the Central Bank of Nigeria, and estimated them using ordinary least squares, auto regressive distributed lag coefficients and vector auto regression coefficients. It found that, three capital market performance indicators (market capitalization, number of listed equities, and value of transactions) positively contributed to economic growth in Nigeria; and four others (stock market turnover, all-share index, number of deals, and value of deals) negatively contributed to economic growth in Nigeria.

Capital Market and Sectoral Output

Specifically, Saka (1988) examined the effects of capital market indicators on construction sector growth in Nigeria. The study proxied the dependent variable, construction sector growth, by construction sector output, and the independent variable, capital market indicators, by number of deals and value of transactions. It, also, employed construction investment and gross domestic product as control variables. It sourced annualized time-series data from Central Bank of Nigeria (CBN) Statistical Bulletin (Volume 16, 2005), and estimated them using co-integrationand Granger causality tests. The study found that, gross domestic product, construction investment and value of trade are significantly positively co-integrated. It, also, found that construction investment granger-caused gross domestic product much more than value of trade.

In another dimension, Uwajumogu*et al* (2013) examined the growth-inducing impact of capital market on agricultural sector in Nigeria within a time dimension 1980-2012. The study proxied the dependent variable, agricultural sector, by agricultural growth rate, and the independent variable, capital market, by market capitalization ratio and all-share index. It, also, employed electricity, inflation rate and gross capital formation as control variables. It sourced annual time-series data from Central Bank of Nigeria (CBN) statistical bulletin and Nigeria Stock Exchange (NSE) official reports and publications, and estimated them using co-integration approach. The study found that, both market capitalization ratio and all-share index exhibited statistically insignificant long-run effects on agricultural output in Nigeria.

Similarly, Agbaeze and Onwuka (2013) examined capital market option in financing agriculture in Nigeria. The study adopted a qualitative research design with extensive literature review. It found that, the recent global economic down turn shifted the tide

of economic policies and research focus in favour of agriculture. It, also, found that, the retrogressive earnings performance of the oil sector also brought to the fore the immediate need to diversify the economy and the revenue base of the country. The study, further, found that, the capital market finance, which provides long-term funds for investment, is the best option for financing agriculture in Nigeria in order to achieve accelerated agricultural development, which would, in turn, engender economic growth.

However, Ibi*et al* (2015) assessed the effects of capital market performance on industrial sector development within a time frame 1980-2012. The study proxied the dependent variable, industrial sector development, by industrial output, and the independent variable, capital market, by market capitalization, number of deals and value of transactions. It, also, employed gross domestic product and exchange rate as control variables. It sourced time series data from Central Bank of Nigeria (CBN) statistical bulletin (2012 edition), and estimated them using co-integration test, granger causality test and error correction mechanism. The study found long-run equilibrium relationship between capital market and industrial output. It, also, found a bi-directional causality between market capitalization and industrial output, and between number of deals and industrial output, but a unidirectional causality between value of transactions and industrial output, running from the latter to the former. It, further, found that, while market capitalization and number of deals exerted significant positive effects on industrial output, value of transactions exerted significant negative effects on it.

In the same vein, Offum and Ihuoma (2018) investigated the direction of causality between capital market and industrial performance in Nigeria within a temporal scope 1985-2015. The study proxied the dependent variable, industrial performance, by share of industrial sector in GDP, and the independent variable, capital market, by market capitalization ratio and total value of shares traded; and, also, employed share of recurrent expenditure on education in GDP and share of domestic investment in GDP as control variables. It sourced secondary data from Central Bank of Nigeria (CBN) statistical bulletin of various editions, and World Bank Development Index (2015), and estimated them using Granger causality test approach. The study found a unidirectional causality between market capitalization ratio and total value of shares traded ratio to

industrial performance, running from the former to the latter.

Similarly, Ini and Eze (2019) investigated the implications of stock market efficiency on the performance of manufacturing sector in Nigeria within a time frame 1985-2017. The study proxied the dependent variable, manufacturing performance, by manufacturing sector contribution to GDP over GDP, and the independent variable, stock market efficiency, by all-share index. It used inflation rate and exchange rate as control variables. It sourced secondary data from CBN Statistical Bulletin, Stock Exchange Fact Book, and World Bank Handbook of Statistics, and estimated them using regression analysis. The study found that, stock market efficiency (i.e. all-share index) had significant negative effects on manufacturing sector performance in Nigeria. It, also, found that, the manufacturing sector, in Nigeria, suffers from low output, high unemployment rate and economic instability.

Also, Eze*et al* (2019) evaluated the effects of stock market liquidity on manufacturing sector performance in Nigeria within a time scope 1981-2017. The study proxied the dependent variable, manufacturing sector performance, by manufacturing sector output, and the independent variable, stock market liquidity, by ratio of market capitalization and All-Share Index (ASI). It employed interest rate and exchange rate as control variables. It sourced time-series data from Central Bank of Nigeria (CBN) statistical bulletin (various editions), and analysed them using auto regressive distributed lag model. The study found that, while the ratio of market capitalization to GDP exerted insignificant positive effect on manufacturing sector performance, ASI exerted significant positive effect on it.

METHODOLOGY

On the threshold ofAyodeji-Ajala (2018_a) capital market significance theorem, the studymeasured the independent variable, capital market performance, by seven indicators, which are all-share index, market capitalization, number of listed equities, number of deals, stock market turnover, value of deals and value of transactions. However, to measure the dependent variable, sectoral output growth, five different models were developed, such that their respective dependent variables are contribution of agricultural sector to Gross Domestic Product (GDP), contribution of industrial sector to GDP, contribution of construction sector to GDP, contribution of

trade sector to GDP, and contribution of service sector to GDP.

The statistical model of multiple regression of Ayodeji and Ajala (2018_a) was, therefore, adapted, which infers that, economic growth is a function of capital market performance indicators. Thus: GDP = f (MCAP, ASI, NLE, NOD, VOD, VTRAN, SMT)

This signifies that, gross domestic product is a function of (or is dependent on) the proxies of capital market performance, which was econometrically presented as:

$GDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu$

Where: GDP = Gross Domestic Product, MCAP =Market Capitalisation, ASI = All Share Index, NLE = Number of Listed Equities, NOD = Number of Deals, VOD = Value of Deals, VTRAN =Value of Transactions, SMT = Stock Market Turnover.

However, this study expanded Ayodeji and Ajala's model by breaking it down into five models, whereby Gross Domestic Product (GDP) was broken into its five constituent parts of contribution of Agriculture to GDP (AGDP), contribution of Industry to GDP (IGDP), contribution of Construction to GDP (CGDP), contribution of Trade to GDP (TGDP), and contribution of Service to GDP (SGDP). As such, the five models for this study are given by

$$AGDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu \quad \ldots\ldots 1$$

$$IGDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu \quad \ldots\ldots 2$$

$$CGDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu \quad \ldots\ldots 3$$

$$TGDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu \quad \ldots\ldots 4$$

$$AGDP = \beta o + \beta_1 MCAP + \beta_2 ASI + \beta_3 NLE + \beta_4 NOD + \beta_5 VOD + \beta_6 VTRAN + \beta_7 SMT + \mu \quad \ldots\ldots 5$$

As, a direct consequence of the theoretical underpinning of this study, positive relationships are expected between all the capital market indicators and the respective contributions of the individual sectors of the economy to gross domestic product.

$$\Delta Y^i = \beta_0 + \sum_{i=1}^{n} \beta_{1\Delta} Y_{t-1} + \sum_{i=0}^{n} \beta_{2\Delta} InMCAP_{t-1} + \sum_{i=0}^{nn} \beta_{3\Delta} InASI_{t-1} + \sum_{i=0} \beta_{4\Delta} InVOD_{t-1}$$

$$+ \sum_{i=0}^{n} \beta_{5\Delta} InNLE_t + \sum_{i=0}^{n} \beta_{6\Delta} InNOD_{t-1} + \sum_{i=0}^{n} \beta_{7\Delta} InVTRAN_{t-1} + \sum_{i=0}^{n} \beta_8 InSMT_{t-1} + \beta_9 InY_{t-1} + \beta_{10} InMCAP_{t-1}$$

$$+ \beta_{11} InASI_{t-1} + \beta_{12} InVOD_{t-1} + \beta_{13} InNLE_{t-1} + \beta_{14\Delta} InNOD_t + \beta_{15\Delta} InVTRAN_{t-1} + \beta_{16} InSMT_t + U_t$$

ANALYSIS AND FINDINGS

Stationarity Test

In checking for unit roots, Augmented Dickey Fuller (ADF) testwas used so as to determine the degree of integration of each variable in the model. The results of the unit roots test are presented in Table 1.

Table 1: Augmented Dickey Fuller (ADF) Test Results

Variable	ADF Value	@ level	@ First Diff	Integration
LAGDP	-3.1888	-3.1888	-	I(0)
LIGDP	-4.3020	-2.4376	-4.3020	I(1)
LTGDP	-8.3800	-2.1618	-8.3800	I(1)
LSGDP	-3.3404	-1.7574	-3.3404	I(1)
LCGDP	-4.7267	-0.8597	-4.7267	I(1)
LMCAP	-4.2620	-1.4594	-4.2620	I(1)
LASI	-3.8957	-2.7044	-	I(0)
LNLE	-3.2258	-3.2258	-3.2258	I(1)
LNOD	-5.3319	-1.5645	-5.3319	I(1)
LVTRAN	-7.4871	-1.6350	-7.4871	I(1)
LSMT	-4.7077	-1.1083	-4.7077	I(1)
LVOD	-4.6321	-0.8983	-4.6321	I(1)

Source: Authors' Computation, 2019, using e-views 9

Based on the ADF test statistic, it was observed that, virtually all the variables in the series became stationary at first differenceI(1), but log of Agricultural SectorGDP (LAGDP) and log of Number of Listed Equities (LNLE) were stationary at level I(0). Therefore, the null hypothesis of the ADF test, which states that, the variables in the series are not stationary, was rejected, and the alternate hypothesis was accepted, as it states that the variables in the series are stationary. The rejection of the null hypothesis was based on MacKinnon (1996) critical values. The lag length was selected based on Aikaike Information Criterion (AIC).

Breusch Godfrey Serial Correlation LM Test

Breusch Godfrey serial correlation LM test was used to examine whether the variables in the series were serially correlated. The decision rule is that, if the p-value of the corresponding F-statistic is less than 0.05 i.e.5%, there is presence of serial correlation, otherwise, there is no autocorrelation. The results of this test are presented in Table 2.

Table 2: Summary of Breusch Godfrey Serial Correlation LM Test Results

SECTORS	F-STAT	F.Prob	Obs-R^2	P.Chi-Sq
LAGDP	0.5827	0.5705	2.0907	0.3516
LIGDP	0.6080	0.5604	2.5763	0.2758
LSGDP	1.3474	0.2916	4.5197	0.1044

LTGDP	1.0602	0.2419	4.7201	0.1210
LCGDP	0.4840	0.6250	1.5973	0.4499

Source: Authors' Computation, 2019, using e-views 9

From Table 2, it was obtained that, the series was free from serial correlation, as it was found that, the p-value, of each of the sectors, is greater than 0.05, that is, 5% level of significance. As such, the null hypothesis of the Breusch Godfrey serial correlation LM test of 'no presence of serial correlation' was retained, and the alternate hypothesis was rejected

Auto Regressive Distributed Lag Model (ARDL) for Long-run Relationship

In testing for long-run relationship between capital market performance and sectoral output in Nigeria, ARDL co-integration method was used with a maximum lag order of 2 so as to minimize the loss of degrees of freedom. The result of bounds testing approach is presented in Table 3.

Table 3: Summary of the ARDL Bound Testing Results

SECTORS	F-STAT V	K	I0 Bound	I1Bound	Significant
LAGDP	1.1771	7	2.32	3.5	5%
LIGDP	10.9345	7	2.32	3.5	5%
LSGDP	3.1743	7	2.32	3.5	5%
LTGDP	27.7381	7	2.32	3.5	5%
LCGDP	6.2193	7	2.32	3.5	5%

Source: Authors' Computation, 2019, using e-views 9

Table 3 shows that, the F-statistic for agricultural sector output of 1.1771 is less than the lower and upper bounds of 2.32 and 3.5 respectively at 5% level of significance. Similarly, the F-statistic of service sector output of 3.1743 is less than the upper bound of 3.5, though greater the lower bound of 2.32 at 5% level of significance. Since it is expected that the F-statistic should be greater than both the lower and upper bounds to prove and affirm the existence of long-run relationship, the results suggest that, long-run relationship neither exists between capital market performance and agricultural sector output nor exists between capital market performance and service sector output. However, the F-statistic for industrial sector output of 10.9345, trade sector output of 27.7381 and construction sector output of 6.2193 are individually greater than both the lower and upper bounds of 2.32 and 3.5 respectively at 5% level of significance. Hence, a long-run relationship exists

between capital market performance and industrial sector output, capital market performance and trade sector output, and capital market performance and construction sector output. Therefore, comparing the number of the variables specifying existence of long-run relationship with those specifying no existence of long-run relationship, the study obtained that, long-run relationship exists between capital market performance and sectoral output growth in Nigeria.

ANALYSIS OF MODEL 1: Capital Market and Agricultural Sector Output

The short and long run relationship between capital market performance and agricultural sector output was investigated using ARDLshort and long run coefficients. It was found that, the speed of adjustment, that is, ECM(-1) of 0.1395 was rightly signed (being negative) and also significant at 5%, as its p-value of 0.0258 is less than 0.05, that is, 5% level of significance. This implies that, the short-run discrepancies are being adjusted and incorporated into the long-run dynamics at 13.995% annually. This confirms that, the speed of adjustment is very slow.

The coefficients of the variables in the model in the short run revealed that, ASI and VTRAN exhibited insignificant positive effects on agricultural output with their respective coefficients of 0.49481 and 0.043015, and p-values of 0.1182 and 0.0786. While SMT exerted significant negative effect on agricultural output with a coefficient of -0.28543, MCAP, NOD, VOD and NLE exhibitedinsignificant negative effects on it with their respective coefficients of -0.14689, -0.07958, -0.16494 and -0.1.78608, and p-values of 0.5402, 0.5143, 0.3258 and 0.5812. The implications of these are: First, the elasticity of agricultural output is 49.48% to ASI and 4.3% to VTRAN by an insignificant direct unit change. Second, while the responsiveness of agricultural output is 28.54% to SMT by a significant indirect unit change, it is 14.69% to MCAP, 7.96% to NOD, 16.5% to VOD and 178.61% to NLE by an insignificant indirect unit change.

Table 4: Summary of ARDL Co-integration/ Short and Long-Run Relationship Results for Model 1

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLASI)	0.49481	0.300692	1.64557	0.1182
D(DLMCAP)	-0.14689	0.235	-0.625063	0.5402

D(DLNOD)	-0.07958	0.119467	-0.666088	0.5143
D(DLSMT)	-0.28543	0.133271	-2.141696	0.0470
D(DLVOD)	-0.16497	0.16303	-1.0119	0.3258
D(DLVTRAN)	0.043015	0.022989	1.871096	0.0786
D(LNLE)	-0.31438	0.558993	-0.562399	0.5812
D(LNLE(-1))	-1.78608	1.224349	-1.458797	0.1629
CointEq(-1)	-0.13953	0.057127	-2.442419	0.0258

Cointeq = LAGDP - (3.5463*DLASI + 0.8771*DLMCAP -0.5703*DLNOD

-2.0456*DLSMT -1.1823*DLVOD + 0.3083*DLVTRAN + 7.5732*LNLE
-30.4274)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLASI	3.546286	1.640911	2.161169	0.0452
DLMCAP	0.877107	1.384011	0.633743	0.5347
DLNOD	-0.57031	0.935184	-0.609841	0.5500
DLSMT	-2.04564	0.704717	-2.902782	0.0099
DLVOD	-1.18233	0.988386	-1.196224	0.2480
DLVTRAN	0.308286	0.124669	2.472834	0.0243
LNLE	7.573185	1.863685	4.063554	0.0008
C	-30.4274	9.918812	-3.067649	0.007

Source: Authors' Computation, 2019, using e-views 9

However, it was found that, in the long run, while ASI, VTRAN, and NLE exerted significant positive effects on agricultural output with their respective coefficients of 3.546286, 0.308286 and 7.573185, and p-values of 0.0452, 0.0243 and 0.0008, MCAP exhibited insignificant positive effect on it with a coefficient of 0.877107 and a p-value of 0.5347. Also, while SMT exerted significant negative effect on agricultural output with a coefficient of -2.04564 and a p-value of 0.0099, NOD and VOD exhibited insignificant negative effects on it with their respective coefficients of -0.57031 and -1.18233, and p-values of 0.5500 and 0.2480. The implications of these are: First, while the elasticity of agricultural output is 354.63% to ASI, 30.83% to VTRAN, and 757.32% to NLE by a significant direct unit change, it is 87.71% to MCAP by an insignificant direct unit change. Second, while the responsiveness of agricultural output is 204.56% to SMT by a significant indirect unit change, it is 57.03% to NOD and 118.23% to VOD by an insignificant indirect unit change.

ANALYSIS OF MODEL 2: Capital Market and Industrial Sector Output

Likewise, the short and long run relationship between capital market performance and industrial sector output was investigated using ARDLshort and long run coefficients.It was found that, the speed of adjustment, that is, ECM(-1) of -1.498 was rightly signed (being negative) and also significant at 5%, as its p-value of 0.0000 is less than 0.05. This implies that, the short-run discrepancies is adjusted and incorporated into the long-run at 149.8 % annually. This confirms that, the speed of adjustment is very sharp and instant.

The coefficients of the variables in the model in the short-run revealed that, MCAP and NODexertedsignificant positive effects on industrial output with their respective coefficients of 1.122564 and 0.187096, and p-values of 0.0001 and 0.023, while NLE exhibited insignificant positive effect on it with a coefficient of 0.419658 and p-value of 0.4297. Also, while SMT exerted significant negative effect on industrial output with a coefficient of -0.35429 and p-value of 0.1072, ASI, VOD and VTRAN exhibited insignificant negative effects on it with their respective coefficients of -0.35429, -0.05443 and -0.02811, and p-values of 0.1072, 0.4578 and 0.289. The implication of these are: First, the responsiveness of industrial output is 112.26% to MCAP and 18.71% to NOD by a significant direct unit change, and 41.97% to NLE by an insignificant direct unit change. Second, industrial output had a responsiveness of 35.43% to SMT by a significant indirect unit change, but 35.43% to ASI, 5.44% to VOD and 2.81% to VTRAN by an insignificant indirect unit change.

Table 5: Summary of ARDL Co-integration/ Short and Long-Run Relationship Results for Model 2

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLASI)	-0.35429	0.205843	-1.721166	0.1072
D(DLMCAP)	1.122564	0.204067	5.500963	0.0001
D(DLNOD)	0.187096	0.073269	2.553541	0.023
D(DLSMT)	-0.76128	0.122421	-6.21852	0.0000
D(DLVOD)	-0.05443	0.07128	-0.76359	0.4578
D(DLVTRAN)	-0.02811	0.025504	-1.102177	0.289
D(LNLE)	0.419658	0.516042	0.813224	0.4297
CointEq(-1)	-1.49803	0.172849	-8.666687	0.0000

Cointeq = DLIGDP - (-0.2365*DLASI + 1.2073*DLMCAP + 0.2302*DLNOD

-0.9415*DLSMT -0.0363*DLVOD -0.0702*DLVTRAN -0.2757*LNLE + 1.3893)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLASI	-0.2365	0.138996	-1.701519	0.1109
DLMCAP	1.207302	0.164044	7.359639	0.0000
DLNOD	0.230166	0.075859	3.034104	0.0089
DLSMT	-0.94147	0.13953	-6.747437	0.0000
DLVOD	-0.03633	0.048301	-0.752229	0.4644
DLVTRAN	-0.07023	0.029018	-2.4203	0.0297
LNLE	-0.2757	0.153363	-1.797692	0.0938
C	1.389337	0.798517	1.739898	0.1038

Source: Authors' Computation, 2019, using e-views 9

Nevertheless, in the long run, it was found that, MCAP and NOD exerted significantpositive effects on industrial output with their respective coefficients of 1.207302 and 0.230166, and p-values of 0.0000 and 0.0089. Also, whileSMT and VTRAN exerted significant negative effects on industrial output with their respective coefficients of -0.94147 and -0.07023, and p-values of 0.0000 and 0.0297, ASI, VOD and NLE exhibited insignificant negative effects on it with their respective coefficients of -0.2365, -0.07023 and -0.2757, and p-values of 0.1109, 0.4644 and 0.0938. The implications of these are: First, the elasticity of industrial sector output was 120.73% to MCAP and 23.02% to NOD by a significant direct unit change. Second, industrial output had an elasticity of 94.15% to SMT and 7.02% to VTRAN by a significant indirect unit change; and 23.65% to ASI, 7.03% to VOD and 27.57% to NLE by an insignificant indirect unit change.

ANALYSIS OF MODEL 3: Capital Market and Construction Sector Output

Table 8 presents ARDL coefficients of the short and long run relationships between capital market performance and construction sector output. It was found that, the speed of adjustment, that is, ECM(-1) of -2.5850 was rightly signed (being negative) and also significant at 5%, as its p-value of 0.009 is less than 0.05. This implies that, the short-run discrepancies were being adjusted and incorporated into the long-run dynamics at 258.5 % annually. This confirms that, the speed of adjustment is,also, very sharp and instant.

The coefficients of the variables in the series, in the short-run, showedthat,while ASI exerted significant positive effect on construction sector output with a coefficient of 0.617683 and p-value of 0.0289, NOD, VTRAN and NLE exhibited insignificant positive effects on it with their respective coefficients of 0.03627, 0.03554 and 0.720231, and p-values of 0.5364, 0.1356 and 0.1883. However, whileMCAP and SMT exerted significantnegative effects on constructionsector output with their respective coefficients of -0.68782 and -0.1958, and p-values of 0.0137 and 0.0467, VOD exhibited insignificant negative effects on it with a coefficient of -0.14289 and p-value of 0.0568. The implications of these are: First, the responsiveness of construction sector output was 61.77% to ASI by a significant direct unit change, and 3.63% to VTRAN and 72.02% to NLE by an insignificant direct unit change. Second, construction sector output had an elasticity of 68.78% to MCAP and 19.58% to SMT by a significant indirect unit change, and 14.29% to VOD by an insignificant indirect unit change

Table 6: Summary of ARDL Co-integration/ Short and Long-Run Relationship Results for Model 3

Co-integrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLCGDP(-1))	0.959429	0.211969	4.52628	0.0202
D(DLASI)	-0.42068	0.128077	-3.284564	0.0463
D(DLASI(-1))	0.617683	0.15638	3.949885	0.0289
D(DLMCAP)	0.583917	0.188796	3.092842	0.0536
D(DLMCAP(-1))	-0.68782	0.131969	-5.211966	0.0137
D(DLNOD)	0.042176	0.069658	0.605471	0.5876
D(DLNOD(-1))	0.03627	0.052103	0.696131	0.5364
D(DLSMT)	-0.06425	0.087475	-0.734485	0.5159
D(DLSMT(-1))	-0.1958	0.059846	-3.271675	0.0467
D(DLVOD)	-0.07231	0.066509	-1.087236	0.3565
D(DLVOD(-1))	-0.14289	0.047325	-3.019225	0.0568
D(DLVTRAN)	-0.0571	0.024127	-2.366743	0.0988
D(DLVTRAN(-1))	0.03554	0.017528	2.027667	0.1356
D(LNLE)	0.81151	0.382818	2.119834	0.1242
D(LNLE(-1))	0.720231	0.424515	1.696596	0.1883
CointEq(-1)	-2.58506	0.428991	-6.025897	0.0092

Cointeq = DLCGDP - (-0.2845*DLASI + 0.5628*DLMCAP -0.0109*DLNOD

-0.0334*DLSMT -0.0214*DLVOD -0.0468*DLVTRAN -0.0313*LNLE +

0.2872)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLASI	-0.28451	0.084465	-3.368411	0.0435
DLMCAP	0.562841	0.057119	9.853833	0.0022
DLNOD	-0.01089	0.034706	-0.313696	0.7743
DLSMT	-0.03344	0.04852	-0.689247	0.5402
DLVOD	-0.02138	0.033104	-0.64592	0.5643
DLVTRAN	-0.0468	0.0198	-2.36375	0.0991
LNLE	-0.03133	0.130496	-0.2401	0.8257
C	0.287245	0.681722	0.421352	0.7019

Source: Authors' Computation, 2019, using e-views 9

In addition, in the long run, it was found that, only MCAP exerted significant positive effect on construction sector output with a coefficient of 0.0562841 and p-value of 0.0022. While ASI exerted significant negative effect on construction sector output with a coefficient of -0.287245 and p-value of 0.0435, NOD, SMT, VOD, VTRAN and NLE exhibited insignificant negative effects on it with their respective coefficients of -0.01089, -0.03344, -0.02138, -0.0468 and -0.03133, and p-values of 0.7743, 0.5402, 0.5643, 0.0991 and 0.8257. The implications of these are: First, construction sector output had an elasticity of 56.28% to MCAP by a significant direct unit change. Second, the elasticity of construction sector output was 28.72% to ASI by a significant indirect unit change; and 1.09% to NOD, 3.34% to SMT, 2.14% to VOD, 4.68% to VTRAN and 3.13% to NLE by an insignificant indirect unit change.

ANALYSIS OF MODEL 4: Capital Market and Trade Sector Output

Furthermore, the short and long run relationship between capital market performance and trade sector output was assessed using ARDL coefficients. It was found that, the speed of adjustment, that is, ECM(-1) of -3.9918 was rightly signed (being negative) and also significant at 5%, as its p-value of 0.0013 is less than 0.05, that is, 5% level of significance. This implies that, the short-run discrepancies were being adjusted and incorporated into the long-run dynamics at 399% annually. This confirms

that, the speed of adjustment was very sharp and instant.

The coefficients of the variables in the series in the short-run revealed that, while ASI exerted significant positive effects on trade sector output with a coefficient of 0.322137 and p-value of 0.4194, VOD exhibited insignificant positive effect on it with a coefficient of 0.529613 and a p-value of 0.0633. Also, while MCAP, VTRAN and NLE exhibited significant negative effects on trade sector output with their respective coefficients of -1.4258, -0.33379 and -7.59946, and p-values of 0.0185, 0.0359 and 0.017, NOD and SMT exerted insignificant negative effects on it with their respective coefficients of -0.47825 and -0.17482, and p-values of 0.0536 and 0.5438.The implications of these are: First, the responsiveness of trade sector output was 32.21% to ASI by a significant direct unit change and 52.96% to VOD by an insignificant direct unit change. Second, trade sector output had responsiveness of 142.58% to MCAP, 33.38% to VTRAN and 759.95% to NLE by a significant indirect unit change, and 47.83% to NOD and 17.48% to SMT by an insignificant indirect unit change

Table 7: Summary of ARDL Co-integration/ Short and Long-Run Relationship Results for Model 4

Co-integrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLTGDP(-1))	1.412564	0.202478	6.976378	0.006
D(DLASI)	-0.41251	0.39447	-1.045731	0.3725
D(DLASI(-1))	0.322137	0.345103	0.933453	0.4194
D(DLMCAP)	1.472705	0.437865	3.363376	0.0436
D(DLMCAP(-1))	-1.4258	0.30487	-4.676735	0.0185
D(DLNOD)	0.267094	0.192411	1.388145	0.2592
D(DLNOD(-1))	-0.47825	0.154638	-3.092691	0.0536
D(DLSMT)	-1.99415	0.254438	-7.837477	0.0043
D(DLSMT(-1))	-0.17482	0.256072	-0.682709	0.5438
D(DLVOD)	0.352751	0.208182	1.694438	0.1888
D(DLVOD(-1))	0.529613	0.183653	2.88377	0.0633
D(DLVTRAN)	-0.23667	0.078681	-3.007949	0.0573
D(DLVTRAN(-1))	-0.33379	0.091874	-3.633093	0.0359
D(LNLE)	3.319606	1.316576	2.521393	0.0861
D(LNLE(-1))	-7.59946	1.576902	-4.81923	0.017
CointEq(-1)	-3.99182	0.335999	-11.880426	0.0013

Cointeq = DLTGDP - (0.1557*DLASI + 0.7600*DLMCAP + 0.0318*DLNOD

-0.6737*DLSMT -0.1041*DLVOD + 0.0888*DLVTRAN -0.3201*LNLE + 1.7239)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLASI	0.155718	0.153935	1.011585	0.3862
DLMCAP	0.759951	0.179232	4.24004	0.024
DLNOD	0.031809	0.073484	0.432866	0.6943
DLSMT	-0.67371	0.113517	-5.93483	0.0096
DLVOD	-0.10414	0.068892	-1.51161	0.2278
DLVTRAN	0.088809	0.043211	2.055259	0.1321
LNLE	-0.32013	0.304702	-1.050635	0.3706
C	1.723908	1.584474	1.088	0.3562

Source: Authors' Computation, 2019, using e-views 9

However, in the long run, it was found that, while MCAP exerted significant positive effect on trade sector output with a coefficient of 0.179232 and p-value of 0.024, ASI, NOD and VTRAN exhibited insignificantpositiveeffects on it with their respective coefficients of 0.155718, 0.031809 and 0.088809, and p-values of 0.3862, 0.6943 and 0.1321. Besides, while SMT exerted significant negative effect on trade sector output with a coefficient of -0.67371 and p-value of 0.0096, VOD and NLE exerted insignificant negative effects on it with their respective coefficients of -0.10414 and -0.32013, and p-values of 0.2278 and 0.3706. The implications of these are: First, the elasticity of trade sector output was 17.92% to MCAP by a significant direct unit change, and 15.57% to ASI, 3.18% to NOD and 8.88% to VTRAN by an insignificant direct unit change. Second, trade sector output had an elasticity of 67.37% to SMT by a significant indirect unit change, and 10.4% to VOD and 32.01% to NLE by an insignificant indirect unit change.

ANALYSIS OF MODEL 5: Capital Market and Service Sector Output

The study also checked for the short and long run relationships between capital market performance and service sector

output using auto regressive distributed lag short and long run coefficients. From this, it was found that, the speed of adjustment, that is, ECM(-1) of -1.0175 was rightly signed (being negative) and also significant at 5%, as its p-value of 0.0040 is less than 0.05, that is, 5% level of significance. This implies that, the short-run discrepancies were adjusted and incorporated into the long-run dynamics at 101.75% annually. This confirms that, the speed of adjustment was very speedy and instant.

The coefficients of the variables in the series in the short-run revealed that, NOD, SMT, VOD, VTRAN and NLE exhibited insignificant positive effects on service sector output with their respective coefficients of 0.100064, 0.066372, 0.101814, 0.028028 and 0.618923, and p-values of 0.1371, 0.551, 0.3637, 0.3048 and 0.1785. However, ASI and MCAP exhibited insignificant negative effects on service sector output with their respective coefficients of -0.33252 and -0.290982, and p-values of 0.1216 and 0.0964. The implications of these are: First, the responsiveness of service sector output was 10% to NOD, 6.64% to SMT, 10.18% to VOD, 2.8% to VTRAN and 61.89% to NLE by an insignificant direct unit change. Second, service sector output had responsiveness of 33.25% to ASI and 29.1% to MCAP by an insignificant indirect unit change.

Table 8: Summary of ARDL Co-integration/ Short and Long-Run Relationship Results for Model 5

Co-integrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLASI)	-0.04607	0.146619	-0.314195	0.7598
D(DLASI(-1))	-0.33252	0.196558	-1.691705	0.1216
D(DLMCAP)	0.035858	0.197604	0.181464	0.8596
D(DLMCAP(-1))	0.290982	0.158564	1.835113	0.0964
D(DLNOD)	-0.02454	0.050441	-0.486445	0.6371
D(DLNOD(-1))	0.100064	0.061912	1.616242	0.1371
D(DLSMT)	0.066372	0.107576	0.616979	0.551
D(DLVOD)	0.101814	0.106985	0.951665	0.3637
D(DLVTRAN)	0.028028	0.025915	1.08154	0.3048
D(LNLE)	0.618923	0.427719	1.447034	0.1785
D(LNLE(-1))	1.082356	0.360947	2.998654	0.0134
CointEq(-1)	-1.01765	0.278178	-3.658269	0.0044

Cointeq = DLSGDP - (-0.0137*DLASI -0.2147*DLMCAP -0.0059*DLNOD +

0.0652*DLSMT + 0.1000*DLVOD + 0.0275*DLVTRAN + 0.2778*LNLE

-1.2514)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLASI	-0.01371	0.165472	-0.082857	0.9356
DLMCAP	-0.21474	0.200634	-1.070288	0.3096
DLNOD	-0.00591	0.055404	-0.106712	0.9171
DLSMT	0.065221	0.110627	0.589563	0.5686
DLVOD	0.100048	0.093907	1.065397	0.3117
DLVTRAN	0.027542	0.028948	0.951413	0.3638
LNLE	0.277823	0.186124	1.49268	0.1664
C	-1.25144	0.975559	-1.282793	0.2285

Source: Authors' Computation, 2019, using e-views 9

However, in the long run, it was found that. SMT, VOD, VTRAN and NLE exhibited insignificant positive effects on service sector output with their respective coefficients of 0.065221, 0.1000048, 0.027542 and 0.277823, and p-values of 0.5686, 0.3117, 0.3638 and 0.1664. However ASI, MCAP and NOD exerted insignificantnegative effects on service sector output with their respective coefficients of -0.01371, -0.21474 and -0.00591, and p-values of 0.9356, 0.3096 and 0.9171.The implication of these are: First, the elasticity of service sector output was 6.52% to SMT, 10% to VOD, 27.54% to VTRAN and 27.78% to NLE by an insignificant direct unit change. Second, service sector had elasticity of 1.37% to ASI, 21.47% to MCAP and 0.59% to NOD by an insignificant indirect unit change.

DISCUSSION OF FINDINGS

Having investigated the effects of capital market performance on output growth of each of the five sectors of Nigeria's economy within the time frame 1984-2016, using auto regressive distributed lag model as the estimation technique, on the threshold of Ayodeji-Ajala capital market economic significance theorem, the following findings emanated from the study:On the effects of capital market performance on agricultural sector output, it was found as follows: First, ASI and VTRAN exhibited insignificantly positive effects on AGDP in the short-run; but, in the long-runthey exerted significantly positive effects on it. The implication of this is that, it is only on the long-run that the positive effects of the level of efficiency and wealth creation capacity of the Nigeria's capital market can be significant on the contributions of agricultural sector to GDP.

Second, while MCAP and NLE (measures of funds mobilization capacity) exhibited insignificantly negative effects on AGDP in the short-run, they exerted significantly positive effects on it in the long-run with larger effects from NLE. The implication of this is that, the effects of the savings-investment or funds mobilization capacity of the Nigeria's capital market would only be significant and positive in the long-run on the contributions of agricultural sector to GDP.

Third, SMT exerted significantly negative effects on AGDP in both the short-run and long-run with a larger value in the long-run. The implication is that, the liquidity transformation capacity of Nigeria's capital market does not have any positive effect on the contributions of agricultural sector to GDP both in the short and long run. Fourth, NOD and VOD exhibited insignificantly negative effects on AGDP both in the short and long run. SinceNOD, also, measures capital market liquidity, the third implication will also suffice here. The findings of this study on ASI, MCAP, VTRAN and NLE in relation to AGDP are in tandem with Ayodeji-Ajala capital market economic significance theorem, which expects a significantly positive long-run relationship between AGDP and those explanatory variables. Also, they are in line with those of Uwajumogu*et al* (2013), who found that both market capitalization ratio and all-share index exerted statistically insignificant long-run effects on agricultural output in Nigeria. These findings are, also, in conformity with those of Agbaeze and Onwuka (2013), who found that, capital market finance, which provides long-term funds for investment, is the best option for financing agriculture in Nigeria

On the effects of capital market performance on industrial sector output, it was found as follows: First, MCAP and NOD exerted significantly positive effects on IGDP both in the short-run and long-run with larger effect from MCAP. The implication of this is that, the funds mobilization capacity of Nigeria's capital market has both short-run and long-run effects on the contributions of industrial sector to GDP. Second, ASI and VOD exhibited insignificantly negative effects on IGDP both in the short-run and long-run with larger effects from ASI. By implication, the efficiency capacity (ASI) and wealth creation capacity (VOD) of Nigeria's capital market do not have any positiveeffect on the contributions of industrial sector to GDP. Third, SMT exerted significantly negative effect on IGDP both in the short-run and long-run.

This implies that, the liquidity profile of Nigeria's capital marketdoes not have any positive effect on the contributions of industrial sector to GDP both in the short and long run.

Fourth, VTRAN exhibited insignificantly negative effect on IGDP in the short-run; but, in the long-run, VTRAN exerted significant negative effect on IGDP. The implication of this is that, the wealth creation capacity of Nigeria's capital market does not have any significant effect on the contributions of industrial sector to GDP.Fifth, NLE exhibited insignificantly positive effect on IGDP in the short-run; but, in the long-run, NLE exhibited insignificantly negative effect on IGDP. This implies that, the positive (though insignificant) effect of NLE on the contributions of industrial sector to GDP could not be sustained in the long-run. The findings of this study on MCAP and NOD,in relation to IGDP,are at tune with Ayodeji-Ajala capital market economic significance theorem; and they are in line with the findings of Ibi *et al* (2015) who found that, while market capitalization and number of deals exerted significant positive effects on industrial output, value of transactions exerted significant negative effects on it. However, the findings of this study on ASI in relation to IGDP are not at tune with the theoretical expectations of this study, and are at variance with those of Ini and Eze (2019), who found that, stock market efficiency (i.e. all-share index) had significant negative effects on manufacturing sector performance in Nigeria.

On the effects of capital market performance on construction sector output, it was found as follows: First, ASI exerted significantly positive effect on CGDP in the short-run; but, in the long-run, ASI exerted significantly negative effect on CGDP. This amounts to a fall in the effects of Nigeria's capital market efficiency on the contributions of construction sector to GDP. Second, MCAP exerted significantly negative effect on CGDPin the short-run; but, in the long-run, MCAP exerted significantly positive effect on CGDP. This implies that, there was improvement in the effects of the funds mobilization capacity of Nigeria's capital market on the contributions of the construction sector to GDP.

Third, SMT exerted significantly negative effect on CGDP in the short-run; but, in the long-run, SMT exhibited insignificantly negative effect on CGDP. By implication, the liquidity transformation capacity of Nigeria's capital market had no positive

effects on the contributions of construction sector to GDP (though this tends to thin out in the long-run). Fourth, VOD exhibited insignificantly negative effect on CGDP both in the short-run and long-run. This implies that, the wealth creation capacity of Nigeria's capital market did not have any positive effect on the contributions of construction sector to GDP (though the implication is not perceptible). With the exception of MCAP, in relation to CGDP, the findings of this study on the relationship between capital market performance indicators and construction sector output are at variance with the theoretical framework of this study (Ayodeji-Ajala capital market economic significance theorem), which expects significantly positive long-run relationship between the dependent and explanatory variables. These findings are, also, at variance with those of Saka (1988), who found a significantly positive long-run relationship between capital market variables and construction sector.

On the effects of capital market performance on trade sector output, it was found as follows: First, ASI exerted significantly positive effect on TGDP in the short-run; but,in the long-run, ASI exhibited insignificantly positive effect on TGDP.By implication, the significant effect of the level of efficiency of Nigeria's capital market, on the contributions of the trade sector to GDP, could not be sustained in the long-run. Second,VOD exhibited insignificantlypositive effect on TGDP in the short-run; but, in the long-run, VOD exhibited insignificantly negative effect on TGDP. Third, MCAP exerted significantly negative effect on TGDP in the short-run; but, in the long-run, MCAP exerted significantly positive effect on TGDP. This implies that, the positive effects of the funds mobilization capacity of Nigeria's capital market could only be felt in the long-run on the contributions of the trade sector to GDP. Fourth, VTRAN exerted significantly negative effect on TGDP in the short-run; but, in the long-run, VTRAN exhibited insignificantly positive effect on TGDP. Fifth, NOD exhibited insignificantly negative effect on TGDP in the short-run; but, in the long-run, NOD exhibited insignificantly positive effect on TGDP. Sixth, SMT exhibited insignificantly negative effect on TGDP in the short-run; but, in the long-run,SMT exerted significantly negative effect on TGDP. This implies that, the liquidity transformation capacity of Nigeria's capital market could not have any positive effect on the contributions of the trade sector to GDP.

Seventh, NLE exerted significant negative effect on TGDP in the short-run; but, in the long-run, NLE exhibited insignificant negative effect on TGDP.While the findings of this study on MCAP-TGDP were at tune withAyodeji-Ajala capital market economic significance theorem, ASI-TGDP, VTRAN-TGDP and NOD-TGDP are partly at tune with it; however, those on VOD-TGDP, SMT-TGDP and NLE-TGDP are totally at variance with it.

On the effects of capital market performance on service sector output, it was found as follows: First, SMT, VOD, VTRAN and NLE exhibited insignificantly positive effects on SGDP both in the short-run and long-run. By implication, the positive effects of the liquidity transformation capacity (SMT), wealth creation capacity (VOD, VTRAN) and funds mobilization capacity (NLE) of Nigeria's capital market were imperceptible on the contributions of service sector to GDP. Second, NOD exhibited insignificantly positive effect on SGDP in the short-run; but,in the long-run, NOD exhibited insignificantly negative effect on SGDP. Third, ASI and MCAP exhibited insignificantly negative effects on SGDP both in the short-run and long-run. The implication of this is that, both the efficiency and funds mobilization capacity of Nigeria's capital market could not be felt whether in the short-run or long-run on the contributions of service sector to GDP.The findings of this study on SMT, VOD, VTRAN and NLE, in relation to service sector output, are partly at tune with the theoretical threshold of the study (Ayodeji-Ajala capital market economic significance theorem), as the study found insignificantly positive long-run relationship between them, whereas, the theory expects significantly positive long-run relationship. However, the findings of this study on NOD, ASI and MCAP are completely at variance with the theoretical expectations of the study.

CONCLUSION AND RECOMMENDATIONS

This study investigated the effects of capital market performance on sectoral output growth in Nigeria within a temporal scope 1984-2018. It was anchored on Ayodeji-Ajala (2018) capital market economic significance theorem. On the effects of capital market performance on agricultural sector output, the *a priori* expectation is that, there would be a significantly positive long-run relationship between agricultural sector output and all the seven capital market performance indicators; however, the study found that, ASI (efficiency capacity), MCAP (funds mobilization capacity),

VTRAN (wealth creation capacity) and NLE (funds mobilization capacity) exerted significantly positive long-run effects on agricultural sector output in Nigeria. It was, therefore, concluded that, the efficiency, funds mobilization and wealth creation capacities of the capital market exert significantly positive long-run effects on agricultural sector output.

On the effects of capital market performance on industrial sector output, the *a priori* expectation is that, there would be a significantly positive long-run relationship between industrial sector output and all the seven capital market performance indicators; however, the study found that, MCAP (funds mobilization capacity) and NOD (touch of liquidity transformation capacity) exerted significantly positive long-run effects on industrial output in Nigeria. It was, therefore, concluded that, the funds mobilization capacity as well as liquidity transformation capacity of the capital market exerts perceptible positive long-run pull on industrial output. On the effects of capital market performance on construction sector output, the *a priori* expectation is that, there would be a significantly positive long-run relationship between construction sector output and all the seven capital market performance indicators; however, the study found that, only MCAP (funds mobilization capacity) exerted significantly positive long-run effects on construction sector output in Nigeria. It was, therefore, concluded that, only the funds mobilization capacity of the capital market exerts significantly positive long-run effect on construction sector output.

On the effects of capital market performance on trade sector output, the *a priori* expectation is that, there would be a significantly positive long-run relationship between trade sector output and all the seven capital market performance indicators; however, the study found that, only MCAP (funds mobilization capacity) exerted significantly positive long-run effects on trade sector output in Nigeria while ASI, VTRAN and NOD exerted insignificantly positive long-run effects on it. It was, therefore, concluded that, only the funds mobilization capacity of the capital market exerts significantly positive long-run effect on trade sector output. On the effects of capital market performance on service sector output, the *a priori* expectation is that, there would be a significantly positive long-run relationship between service sector output and all the seven capital market performance indicators; however, the study found that, none of the capital market performance

indicators exerted significantly positive long-run effects on service sector output in Nigeria. It was, therefore, concluded that, capital market performance does not exert significantly positive long-run effects on service sector output.

The overall conclusion of this study is that, capital market performance exerts heterogeneous long-run effects on sectoral output. Based on the findings of this study, the following recommendations were made: First, government, at all levels, should focus more on agricultural development initiatives and strategies, as the sector manifests high tendency to respond significantly positively to capital market incitements in the long-run, much more that the sector is the largest employer of labour in Nigeria. Also, more government efforts, resources and attention should be geared toward the upgrading of market infrastructure, and toward the sanitization of Nigeria's capital market against market infractions and insider abuses so as to boost the efficiency and liquidity performance of the market so that its effects can be noticeably felt on the industrial, construction, trade and service sectors of the economy.

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