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FINANCIAL SECTOR LIBERALIZATION AND PERFORMANCE OF THE NIGERIAN ECONOMY

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Abstract

This study examined the relationship between financial sector liberalization and performance of the Nigerian economy following the McKinnon and Shaw (1973) thesis by developing two models with modifications.Increase in savings through real interest rate and credit to the private sector are the two channels through which financial liberalization impacts on economic growth in the McKinnon and Shaw (1973) thesis. All the variables used in this study were sourced from CBN statistical bulletin. The study adopted Engel-Granger cointegration/error correction mechanism as analytical method. The result of the unit root and cointegrtaion test showed that the variables were integrated of order one, I(1) and evidence of long run relationship respectively. The parsimonious error correction results revealed that in the first model, with the exception of prime lending rate (PLR), real deposit rate (RDR), market capitalization as a ratio of GDP (MCGDP) and broad money supply as a ratio of GDP (MSGDP) all impacted on savings. However, while RDR and MCGDP impacted positively on SAGDP, the impact of MSGDP was negative on SAGDP. The results of the second model on the other hand revealed that while RDR, MCGDP and MSGDP maintained significant impact on credit to the private sector as a ratio of GDP (CPGDP) with PLR negative and insignificant, MSGDP impacted positively on CPGDP. Consequently, the study concluded that the impact of financial sector liberalization on the performance of the Nigerian economy is mixed. That is, while the significant positive impact of RDR on SAGDP indicates that financial liberalization stimulates growth in savings, the insignificant negative impact of prime lending rate on credit to the private sector indicates that financial liberalization does not stimulate credit to the private sector. The study thus recommended thatmonetary authorities particularly the Central Bank should determine an appropriate monetary policy rate that will keep both real deposit rate and the prime lending rate moderate. This will ensure that the prime lending rate is not too high to discourage borrowing for productive investment by the private sector and at the same time the real deposit rate is kept not too low to encourage saving.

Keywords: Financial Liberalization, Economic Growth, OLS, Parsimonious Error Correction Model.

Introduction

Economic growth relates to the sustained increase in the productive capacity of an economy evidenced in rising output of goods and services as well as national income over time. This growth is contingent on productive investment and the financing of such productive activities can be obtained through two channels, via capital markets and banks. In modem economies, these two channels are complementary and constitute the financial system.The capital market and banks are key players in the financing of economies and when their own inherent conditions prevent them from performing this function, economic growth is compromised. As McKinnon and Shaw (1973) observed in their seminal work on the key roles of banks as propellants of growth and development in developing economies, a feeble banking system is repressive, distortionary and disconnects the intermediation process, thereby, precipitating macroeconomic instability. This requires that policy makers, must articulate robust policies that will deepen the financial system to enable both the capital market and banks to play their roles most efficiently. Financial liberalization became a useful and important monetary policy in many countries following the directive from the "Washington Consensus" or "Bretton Woods"in the early 1970s due to the seminal work of McKinnon and Shaw (1973) in which they argued that liberalization of the financial sector will lead to increase in savings, encourage investments and induce economic growth. Hence, many countries especially developing countries have embraced financial liberalization as the way forward for their economies.

A feeble financial system characterized by repression, as argued by McKinnon and Shaw (1973) is the existence of interest rates ceilings, high reserve ratios, regulated lending, restriction to entry and exit in the banking activities, restriction of foreign currency transactions and directed ceilings in an economy. This entails that government imposes control over financial sector activities which engendersdecrease in savings, discourage investment, and lack of investment in an economy thereby retarding economic growth. They argued that financial liberalization is the way forward in an economy especially a developing economy. This thesis gained a lot of attention as many

developing economies liberalized their respective financial sectors following the directive of the Bretton Woods Institutions and the Washington Consensus. The International Monetary Fund, and the World Bank also made it part of the economic policy prescription by developing a programme called "structural adjustment programme (SAP)" aimed at liberalizing distressed economies.

Financial liberalization thus, refers to the removal of controls and restrictions placed on the financial sector by a governing authority. More particularly, domestic financial liberalizationentails allowing market forces to work by eliminating controls on lending and deposit rates and on credit allocation and, more generally, by reducing the role of the state in the domestic financial system. Financial liberalization also borders on capital account liberalization which involves removing controls on both the movement of capital in and out of a country and also the restrictions on the convertibility of the currency.

Prior to liberalization of the financial sector, Nigeria had a repressed financial sector in which the government and the Central Bank of Nigeria (CBN), restricted and controlled the activities of the financial sector. However, following the adoption of SAP, Nigeria liberalized her economy in August 1987. This policy initiative commenced with the liberalization of interest rates. Apart from the liberalization of interest rates, the reform also involved promotion of market-based system of credit allocation, enhancingcompetition, and efficiency of the regulatory and supervisory framework (Jegede and Mokululu, 2004; Agu et al., 2014). The adoption of this economic package was motivated by the need to proactively put the Nigerian financial sector and the economy at large on the path of global competitiveness. Interest rate liberalization which was the first financial reform to be undertaken was aimed at enhancing the ability of banks to charge market-based loan rates and hence guarantee the efficient allocation of scarce resources (Ikhide and Alawode, 2001). Other aspects of liberalization followed the liberalization of interest rates subsequently.

Thegrowth performance of the Nigerian economyin real terms has shownthat the economy has been fluctuating since the 1970s,the second decade after independence. For example, from 1970 to 1979, real gross domestic product (RGDP) grew at an average of 16.25%. This high growth rate could be

attributed to the increase in government revenue at the time due to the global crude oil boom. This is seen on table 1 below where industry which contains the mining sub-sector contributed 22.5% of RGDP growth rate and which possibly spilled over to the trade and service sectors of the economy with 15.6% and 15.5% respectively. The period between 1980 and 1989 had RGDP growth rate averaged at 10.3. During this decade characterized by the crash in the global crude oil price which compelled the adoption of austerity measures in the economy, agriculture took the lead roleand contributed 12.7% of RGDP growth rate, industry's contribution declined by over 100% to 9.1% as a result,the trade and service sectors declined to 10.5% and 8.9% respectively. Between 1990 and 1999 RGDP growth rate declined to a low of 2.7% after the adoption of the World Bank's structural adjustment programme in 1986 and liberalizing the financial sector in 1987. Agricultural RGDP fluctuated downwards from 12.7% in the previous decade to 3.4%, industry nosedived further to 1.4% and accordingly, the trade and the service sectors declined to 2% and 4.9% respectively. Real GDP fluctuated upwards to 7.2% in the 2000 to 2009 decade with agriculture contributing 17.9%, industry 12.6%, with tradeand service sectors rising accordingly. However, the improvements recorded in the real sector declined in the period between 2010 and 2018 as seen on the last column of table 1 below.

Table 1: Growth Performance of the Real Sector

Item	Average Real Sector Growth in Percentage				
	1970-79	1980-89	1990-99	2000-09	2010-18
1. Real GDP Growth Rate	16.3	10.3	2.7	7.2	3.6
(a) Agriculture	9.1	12.7	3.4	17.9	3.8
(b) Industry	22.5	9.1	1.4	12.6	1.0
(c) Trade	15.6	10.5	2.0	19.2	3.7
(d) Service	15.5	8.9	4.9	19.9	4.5
2. Gross Fixed Capital Formation	8.0	4.9	18.0	22.9	8.3
3. Total Savings	20.9	15.7	21.2	25.6	8.7

Source: CBN Statistical Bulletin 2008 and 2018

This interaction of the real sector sub-sectors is shown in figure 1 as seen below. Corroborating the real sector performance, we explore the behaviour investment and savings following the McKinnon and Shaw (1973) hypothesis

that liberalization of the financial sector would spur up savings and investment through increase the deposit rate. In table 1 above, gross fixed capital formation growth rate which represents total investment in the economy was reported in the 1980 to 1989 decade as 4.9%.

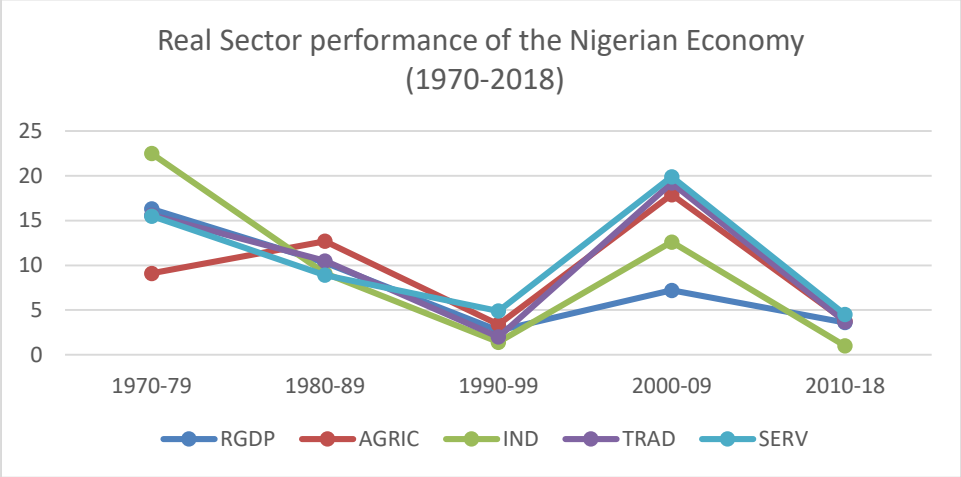


Figure 1: Performance of Sub-sectors of the Real Sector in Nigeria, 1970-2018.

Source: Authors' Derivation Using Microsoft Excel.

The growth rate of investment rose to 18% on the average between 1990 and 1999, further rose to 22.9% in the following decade before dropping to 8.3% between 2010 and 2018. It was seen that savings dropped from 20.9% to 15.7% on the average in the 1970 to 1979 decade. It rose to 21.2% between 1990 and 1999, further rose to 25.6% in the following decade before dropping to 8.7% between 2010 and 2018. It is obvious that savings exceeded investment in all the decades.This is further illustrated in figure 2 below.

The average growth rate of savings and investment revealed that though both savings and investment rose and declined relatively proportionately, the higher savings over investment is indicative of imbalance and calls for research to verify the channel through which financial liberalization impacts on economic growth in a developing economy like Nigeria. Financial liberalization according to theory is meant to foster economic growth through increase in savings via an increase in real deposit rate and increase in private investment

in high priority sectors, but how this policy has contributed to the growth of the Nigerian economy remains an empirical question. Against this background therefore, the basic thrust of this paper is to empirically investigate the impact of financial liberalization on the performance of the Nigerian economy using the McKinnon– Shaw model.Specifically, this research is set to examine the McKinnon and Shaw (1973) thesis that financial liberalization impact on economic growth through two channels: increase in savings and the credit to the private sector.

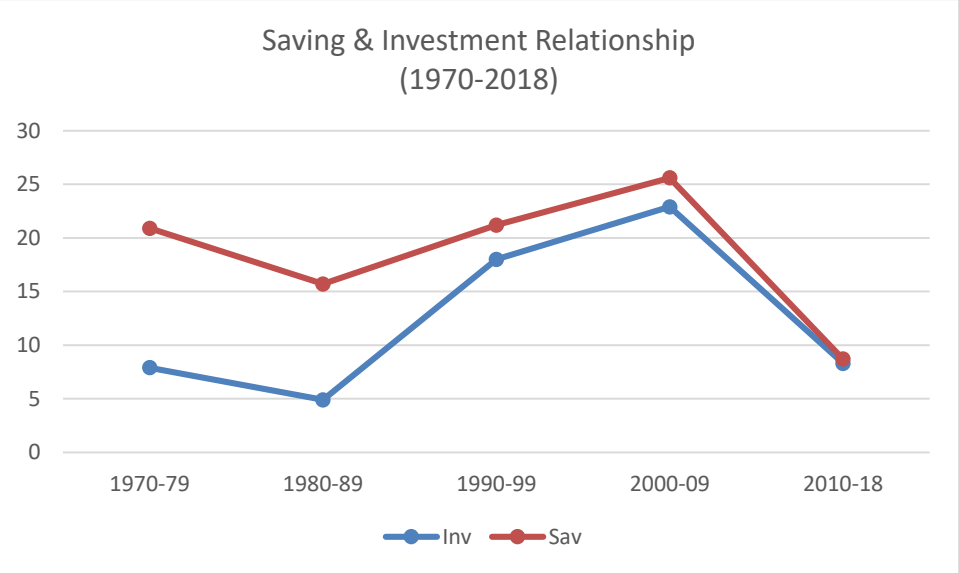


Figure 2: Relationship Between Savings and Investment in Nigeria, 1970-2018.
Source: Authors' Derivation using Microsoft Excel.

The rest of this paper is divided into the following sections: section two is literature review and theoretical framework; section three is material and methodology; section four unveils data analysis and results; section five is conclusion and recommendations for policy.

Literature Review

Theoretical Framework

The McKinnon–Shaw Thesis (1973)

McKinnon (1973) and Shaw (1973) postulated that in a developing country especially, when interest rate is liberalized, it will lead to increase in the real interest rate which will lead to increase in savings, spur investments and eventually lead to economic growth. The initial framework of McKinnon (1973) and Shaw (1973) focused on financial repression and the need to alleviate financial repression through allowing the market to determine real interest rates, removal of credit control among others. The outcome of repression, according to McKinnon (1973) and Shaw (1973) will be low savings, high consumption, low investments and repressed economic growth. The McKinnon–Shaw framework is centered on the distortions in the market caused by financial repression (Savanhu et al., 2011).

Shaw (1973), proposed the "debt-intermediation hypothesis" whereby expanded financial intermediation between savers and investors resulting from financial liberalization (higher real interest rate) and financial development increases the incentive to save and invest, stimulates the investment due to increased supply of credit and increased level of average efficiency of investment. For Shaw, the investment (I) is a decreasing function of real interest rate (r) and the saving is an increasing function of economic growth rate (g) and real interest rate (r). i.e., he further argued that increased financial intermediation provided the impetus for growth more directly. Liberalization would result in an expanded, improved and integrated financial sector that would lead to an increase in the savings rate, an increase in the rate of investment (by facilitating more- lumpy investment); and a direct enhancement to growth (by improved financial technologies). Thus, McKinnon–Shaw (1973) viewed financial liberalization as (i) market-determined interest rates (ii) greater ease of entry into the banking sector to encourage competition (iii) the elimination of directed credit programmes (iv)

the integration of formal and informal markets (v) reduced fiscal dependence of the state on credit from the banking system (to allow for greater expansion of credit to the private sector) (vi) movement towards equilibrium exchange rates and, eventually, flexible exchange rate regimes with open capital accounts (Serieux, 2008).

McKinnon (1973) and Shaw (1973) further assert that higher real interest rate also aids the channeling of funds to the most productive enterprises and facilitate technological innovation and development. This they explain that paying an interest rate that is above the marginal efficiency of investment can induce some entrepreneurs to disinvest from inferior processes to improved technological processes and high yielding enterprises. Thus, generating new positive net savings which is important for reducing foreign dependence and stimulating more investment and consequently growth (Orji, Ogbuabor, and Anthony-Orji, 2015).

According to Mamoon and Nicholas (2017), there are two legs through which interest rates and financial development improves real economic activity after liberalization in McKinnon and Shaw thesis. The first leg implies that through liberalization of repressed financial markets in a developing country, the financial sector enables to offer higher returns on its saving instruments (e.g. deposits) and thus attracts higher levels of savings from the household. In addition to this financial development takes place with the abolishing of restrictions (i.e., credit ceilings) prevailing in the system. In response to liberalized/improved financial system, financial savings would increase and so does the private savings which then be utilized by investors. Thus, private investments increase and ultimately economy undertakes a positive growth path. The second leg concentrates on the increased level of allocative efficiency of the financial sector after its liberalization.

The liberalized financial system allocates the resources it has generated to more efficient investments. One indicator of such efficiency is that financial sector increase allocations to the private sector which is considered to be more efficient than public. The efficient private sector utilizes these allocated resources investing in capital intensive projects and the country's productive efficiency improves. This once again affects economic growth positively.

The Endogenous Growth Theory

Romer (1986) relaunched the growth literature with a paper that presented a model of increasing returns in which there was a stable positive equilibrium growth rate that resulted from endogenous accumulation of knowledge. This was an important break with the existing literature, in which technological progress had largely been treated as completely exogenous.In Romer's model, firm j's production function is of the form

$$Y_t = A_t F(K_{t,j} L_{t,j}) \quad (1)$$

where aggregate output-augmenting technological progress is captured by A_t. Its capital accumulates without depreciation,

$$\acute{K}_{t,j} = i_{t,j} \quad (2)$$

Firms and individuals are distributed along the unit interval with a total mass of 1, as in Aggregation (and, importantly, there is no population growth). Thus, aggregate investment is, e.g.,

$$I = \int_0^1 it,j \; dt \quad (3)$$

Romer assumes that the aggregate stock of knowledge in the economy is proportional to the cumulative sum of past aggregate investment

$$\Sigma_t = \int_{-\infty}^{t} Iv \, dv \quad (4)$$

which, not coincidentally, is identical to the size of the aggregate capital stock,

$$K_t = \int_{-\infty}^{t} Iv \, dv \quad (5)$$

Romer makes the crucial assumption that the effect of the stock of knowledge determines
productivity via

$$A_t = \sum_t^{\eta} \quad (6)$$

Where $\eta < 1$. Thus, suppressing the t subscript, with a firm-level Cobb-Douglas production function. A balance growth path can occur in this economy if $\alpha + \eta = 1$, in which case

$$C_t^{\cdot} / C_t = \rho^{-1} (\alpha - v) \quad (7)$$

so there is constant growth forever at a rate that depends on the degree of impatience and capital's share in output. Finally, the steady-state growth rate that would be chosen by the social planner is

$C_t^* / C_t = \rho^{-1} (\alpha + \eta - v)$ 8

Because, the social planner would take into account the fact that the externalities imply that there are higher returns to capital accumulation at the social level than at the individual level. Thus, this model implies that capital accumulation should be subsidized if the social planner wants to induce the private economy to move toward the social optimum.

This study is thus anchored mainly on the McKinnon and Shaw (1973) thesis and supported by Romer (1986) increasing returns and long run growth theory.

Empirical Literature Review

There are several studies on the impact of financial liberalization and economic growth in the literature. This section explores some of the findings in this area in a bid to filling the gap in the literature as well as contributes to the existing stock of knowledge. Exploring the nexus at the global level, Romain and Aaron (2016) in their study broadly looked at the relationship among financial liberalization, debt mismatch, allocative efficiency and growth in the United States. The authors submitted that financial liberalization increased growth, but led to more crises and costly bailouts. They presented a two-sector model in which liberalization, by allowing debt-denomination mismatch, relaxes borrowing limits in the financially constrained sector, but endogenously generate crisis risk. When regulation restricts external financing to standard debt, liberalization preserves financial discipline and may increase allocative efficiency, growth, and consumption possibilities. By contrast, under unfettered liberalization that also allowed uncollateralized option-like liabilities, discipline broke down, and efficiency fell. The model yielded a testable gains-from-liberalization condition, which holds in emerging markets. It also helped to rationalize the contrasting experience of emerging markets and the recent US housing crisis.

In Asia, Wang and Luo (2019) examined the effect of financial liberalization on bank risk-taking, using bank-level data of 169 Chinese banks from 2000-2014. Empirical results showed that bank stability increases with the development of financial liberalization. The study also provided evidence indicating that banks with larger size, longer operating periods, and state ownership were more salient with the development of financial liberalization.

However, such positive effects of financial liberalization on bank stability may be weakened by worse macroenvironment gauged by low economic growth, poor law enforcement, and instable political conditions.

James and Warwick (2005) examined whether financial development led toeconomic growth or vice versa in the small open economy of Malaysia.Using time series data from 1960to 2001, they conductedcointegration and various causality tests to assess the finance-growthlink by taking saving, investment, trade and real interest rate into account. They argue that theresults obtained from cross-sectional studies are not able to address this issue satisfactorilyand highlight the importance of country specific studies. Contrary to theconventional findings, their results supported the view that output growth causes financialdepth in the long-run.

Saqib (2016) evaluated the impact of banking sector liberalization on long-term economicgrowth in Pakistan by using a time series data for the period 1971–2011. The results show that there existed a significant positive long run relationship between banking sector development and economic growth in the country. The sensitivity analysis also showed that the relationship remained positive and significant no matter what combinations of the omitted variables are used in the basic model. Thus, the findings support the core idea that banking sector development stimulates long term economic growth in a country.

Covering about the same period but differing in technique of analysis and variables, Munir, Chaudhry and Akhtar (2013) investigated the empirical linkages between economic growth and financial liberalization in Pakistan during 1972-2010 by using annual time series data. ADF unit root test was used to check the stationary of variables. Long run relationship was confirmed through Johansen co-integration test. VECM was employed to check short run dynamics among variables. The empirical results showed that there existed a positive relationship between financial liberalization and economic growth. Deposit rate has positive impact on economic growth while lending rate has negative impact on economic growth which was according to financial liberalization theory.

Mamoonand Nicholas (2017) evaluated the impact of financial liberalization on economic growth in Pakistan from 1980 to 2016 using ordinary least square technique. The variables included in the study were: the ratio of private saving to GDP as the dependent variable while credit to private sector, credit to domestic sector, real deposit rate, ratio of broad money supply to GDP, ratio of stock market turnover to GDP and ratio of market capitalization to GDP were used as explanatory variables in the study. Following McKinnon and Shaw (MS) thesis (1973), it was assumed that financial liberalization through deepening and eliminating distortion and segmentation of financial markets, improves the process of the mobilization of savings as well as the efficiency of investment, thereby accelerating the overall rate of economic growth. Financial liberalization exerted positive effects on the financial system through a more efficient banking sector and more actively performing securities market in Pakistan. In addition to this, a considerable financial deepening was also witnessed after the 1990s in the financial sector through improved banking mechanism. However, since the OLS analysis explicitly assumes the exogeneity of financial variables with respect to real economic variables and could not address the time series data problems, it suffers from some theoretical and empirical handicaps Thus some advanced time series econometric techniques are to be employed to have a more accurate analysis.

Zeeshan, Naeem and Malik (2019) examined the effect of trade and financial liberalization on economic growth in Pakistan. Specifically, two proxies for each trade and financial openness were taken for Pakistan that is common in this area of research. Trade liberalization measures were export to GDP ratio and ratio of exports plus imports to GDP while net Foreign Direct Investment as percentage of GDP and foreign assets of central bank were taken as measures for financial liberalization. The results showed that the both measures of trade liberalization found significant and more elastic and net FDI found insignificant and foreign assets with central bank was found statistically significant but less elastic. Model was found stable successfully validating the necessary stability checks like CUSUM and CUSUMSQ, heteroscedasticity, autocorrelation and normality tests. The study was important and significant in understanding the behavior of liberalization measures in determining GDP in Pakistan but it's an opening debate for many other measures for future research

where literature is enriched and suggested as many factors of liberalization determining economic performance.

Bumann, Hermes and Lensink (2012) investigated the relationship between financial liberalization and economic growth by conducting a meta-analysis based on 441 t-statistics reported in 60 empirical studies. The study focused on explaining the heterogeneity of results reported in the studies of the sample, investigating the importance of study, dataand method-specific characteristics. Although the results indicated that, on average, there was a positive effect of financial liberalization on growth, the significance of this effect was weak. The analysis further found that financial liberalization policies carried out during the 1970s had stronger negative relationship with growth. Moreover, the results showed that studies that took into account a measure of the level of development of the financial system reported lower t-statistics for the relationship between liberalization and growth.The studyheld that, since on impact, financial liberalization provoked financial instability and crises owing to weak institutions andover the medium to long run, unrestricted capital flows stimulated institutional development such that financial markets can stabilize the economy. Further research is needed to be able to draw meaningful conclusions on the different effects of the short and long-term growth effects of financial liberalization, for example by employing meta-regression analysis.

In Africa, Roux and Moyo (2015) investigated the relationship between financial liberalization and economic growth in Southern African Development Community (SADC) countries. Annual data for the 15 SADC countries for the period 1985-2011 was used to develop a fixed effect model, generalized method of moments (GMM) as well as the fully-modified OLS (FMOLS) cointegration test. The results revealed that there was a positive relationship between financial liberalization and economic growth in SADC but there is no long-run relationship between the two variables. This suggested that the relationship between financial liberalization and economic growth is a short-run phenomenon. It was recommended that the SADC adopt measures to increase the level of financial openness in the region in order to increase economic growth. However, prior to the increase in the level of financial openness, well-defined property rights and a sound regulatory framework

should be in place to monitor the financial liberalization process in order to avoid financial crises.

Njikam (2017) examined whether the effect of financial liberalization on economic growth depended on reform complementarities. A non-linear growth regression specification that interact a proxy of financial liberalization with proxies of reform complementarities was estimated using a panel of 45 Sub-Saharan Africa (SSA) countries. The cross-country, panel-data evidence showed no clear relationship between financial liberalization and growth. The study however, found that financial liberalization was more likely to positively and significantly increase growth across the SSA region if the following complementary reforms were undertaken: improvement in educational attainment, macro-economic and external stability, and overall governance.

Egbetunde, Olusola and Ademola (2017) studied the structural interaction of the interest rate liberalization-growth nexus; through the inclusion of financial development variables, for sub-Saharan African economies spanning the periods 1980-2012. Coupled with the institutional theory of growth, the study relied on the McKinnon-Shaw framework. Using panel unit-root tests to purify the data off spurious regression estimates, both panel cointegration and panel error correction models were employed for empirical investigations. From the results obtained, it was evident that other factors such as the openness to trade and price stability were much more significant for interest rate liberalization and economic growth in sub-Saharan African countries. More so, the extent as well as degree of financial development relatively assisted in reducing interest rate; further facilitates investment and then engendered growth. Interestingly, the results showed that public institutions have been found significantly detrimental at driving the growth process of the sub-Saharan African economies. Thus, the study recommended that the level of financial development, price stability and institutional arrangement should be properly attended to for effective and far-reaching policy suggestions in sub-Saharan African economies

In Nigeria, Omopintem and Chukwu (2019) examined the effect of financial liberalization on Nigerian economic growth (1990 - 2018) using error correction model(ECM) to test the effect of the independent variables (Foreign

Direct Investment, Interest rate, Trade openness, Foreign portfolio investment, Currency exchange rate Aggregate savings) on the dependent variable, economic growth (proxy by Gross Domestic Product). The study found that financial liberalization had negative and insignificant effect on economic growth of Nigeria. The study therefore recommended among others that Government should aim at creating conditions which make private investment attractive, avoid drastic policy reversal and implement appropriate interest rate policies.

Orji, Anthony-Orji and Mba (2015) investigated the impact of financial liberalization on output growth in Nigeria over the period of 1986-2011. Employing the Ordinary Least Square method of analysis, the empirical findings showed that financial liberalization policy (proxied by credit to privatesector/GDP) is negatively related to output growth in Nigeria within the period under review. Thus, this suggested that credits to private sector may have been used for buying and selling of consumables, or diverted to some unproductive ventures, rather than production activities, which would have increased economic growth. Moreover, available evidence showed that the amount of credit to the private sector, as a proportion of the total credit to the economy, is too negligible to contribute positively to economic growth. The results also showed that there is unidirectional causality running from output growth to financial liberalization. This implies that policies promoting economic growth in Nigeria would stimulate the gains from financial liberalization in the long run. The study recommended government should encourage banks to increase their lending to the private sector, especially small and medium enterprises that are ready to invest in the real sector of the economy to enhance output growth.

Nwadiubu, Sergius and Onwuka (2014) examined the impact of financial liberalization on economic growth in Nigeria from 1987 to 2012. The study employed an empirical examination usingthe Johansen Co-integration test and the Error Correction Mechanism (ECM). The results obtained from the econometric model showed the existence of a long-runequilibrium relationship among the variables and a very high coefficient of multiple determinations in both the Over-parameterizedand the Parsimonious Models. However, the descriptive statistics shows that financial liberalization hasimpacted minimally

on economic growth in Nigeria for the period under review. The particular sequencing ofthe liberalization process and the hostile macroeconomic environment in Nigeria over the years combined tominimize the expected benefits of financial liberalization. The study recommended that government shouldpromote monetary stability, ensure sound macroeconomic environment and provide critical infrastructures toenable the economy grow in a sustainable manner.

Okwuchukwu and Ariwa (2017) examined the impact of financial system liberalization, Savings and Investment on the economy of Nigeria between 1970 and 2014 using ordinary least square technique. The selected indicators of financial liberalization used were ratio of liquid liabilities to GDP (M2GDP) and real interest rate (INT). Other explanatory variables of interest are savings (SAV) and investment (INV). The results of the estimation revealed that the explanatoryvariables were able to influence the growth process positively and significantly in the economy of Nigeria except interest rate which had negative impact and the dummy variable that was not significant. The study thus recommended that monetary policies should be geared towards increasing the level of money supply to enhance savings and investment. Furthermore, for financial system liberalization to yield result in Nigeria there is need to lower the lending interest rate to ensure that potential borrowers' costs are reduced and return on investment increased.

Kaita (2015) examined the financial liberalization experience in Nigeria. In particular, the study established the long-run and short-run relationship between financial liberalization and real output using the ARDL framework with annual observations over the period 1981-2012. The study used three measures as proxies to indicate the degree of financial liberalization: KAOPEN-a financial openness index; money supply as a ratio of GDP, M2; and credit to the private sector as a ratio of GDP, CPS. The results obtained showed positive long-run equilibrium relationship between financial liberalization and economic growth. This supports the view that financial liberalization plays a crucial role in the process of economic development; the financial liberalization process in Nigeria stimulated financial development leading to significant contribution to economic growth. The study thus recommended that since financial development is important to economic

growth, measures should be taken to reduce government inefficiencies in order to release resources for the development of financial institutions.

Ubesie (2016) evaluated the effect of financial sector liberalization on the economic growth of Nigeria from 1980 to 2013 using the.In the vector error correction model (VECM) which had, real gross domestic product (real GDP) was used to proxy economic growth while Real Interest Rate, Real Exchange Rate, Inflation Rate, Total Deposit and Foreign Direct Investment were used to capture financial sector liberalization. The results of the co-integration test showed existence of a long run relationship between the dependent and independent variables at a 5% significance level. The error correction model (ECM) showed a very high coefficient of multiple determinations of 92%. The study found that financial sector liberalization positively reinforced economic growth in Nigeria. It was recommended that advantage of reform programmes in Nigeria should be consolidated by the government by avoiding drastic policy reversal but concentrate effort in perfecting the existing policy. This will induce prudence on the part of major operators in the financial market and encourage saving behavior of all economic agents.

Ikeora, Igbodika and Jessie (2016) evaluated the relationship between financial liberalization and economic growth in Nigeria using data spanning (1987-2013). Using the vector error correction model (VECM), the study showed long-run equilibrium relationship between financial liberalization and economic growth in Nigeria and the result confirms that about 73% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 63% of the variations in economic growth can be explained by changes in financial liberalization variables. There was no causality between financial liberalization and economic growth in Nigeria. The study therefore recommended that, strong macroeconomic policies such as (monetary and fiscal) should be pursued to maintain and stabilize the economy. Monetary authorities should lay down strict prudential rules and regulations to stabilize and strengthen the banking industry. The monetary authority (CBN) should implement policies that will increase the flow of investable funds and improve the capacity of banks to extend credit to the economy.

Fasanya and Olayemi (2020) examined the impact of financial liberalization on economic growth in Nigeria for the period of 1981–2013 using the autoregressive distributed lag bounds testingapproach. The findings of this study revealed strong relationship between the indicators of financial liberalization and economic growth in Nigeria. They found that very high levels of financialopenness generally erode the growth-promoting role of financial development. From the policy perspective, there is an ardent need to stabilize the performance of financial system in Nigeria.

Having reviewed the literature particularly the empirical literature, it crystal clear that the focus of most studies was on the nexus between financial liberalization variables and economic growth proxied by the gross domestic product (GDP) of the economies under study, with the exception of Mamoon and Nicholas (2017) which spanned from 1980 to 2016 in Pakistan and Egbetunde, Olusola and Ademola (2017) from 1980 to 2012 in a number of Sub-Saharan African economies. These studies differed from the other studies by focusing on the channels through which financial liberalization impacts of the economy. The current study filled the gap in the literature by taking a clue from Mamoon and Nicholas (2017) in terms of verifying the channels through which financial liberalization impacts on the Nigerian economy. Particularly, it focused on savings growth and the efficiency of the transmission of savings to productive investment that eventually culminate to economic growth as separate models using the same explanatory variables.Besides, our study has larger time frame from 1970 to 2018 and uses a dummy variable of zero (0) for pre-structural adjustment era and one (1) for post-structural adjustment era to capture the effect of liberalization of the financial sector in Nigeria.

Methodology

Data and Source

This study used secondary data obtained from CBN statistical bulletin, various issues. The data covers the period, 1970 – 2018. The variable used in the model specifications are the ratio of domestic savings to GDP (SAGDP). This is also called savings deepening, the ratio of credit to the private sector to GDP (CPGDP), the real deposit rate (RDR) (this is the interest rate paid on savings deposit), the prime lending rate (PLR) (this the interest rate paid for

borrowed funds in the money market). Together they determine the interest rate spread in the money market in Nigeria. Market capitalization as a ratio of GDP (MCGDP) and broad money supply as a ratio of GDP (MSGDP) measures capital and money markets deepening.

Model Specification

This study follows the McKinnon and Shaw (1973) framework of financial repression and as adopted by Mamoon and Nicholas (2017) with modification.We breakdown our models into two such that model one x-rays the link with which financial liberalization impact on saving. This implies that through liberalization of repressed financial markets in a developing country, the financial sector will be able to offer higher returns on its saving instruments (e.g. deposits) and thus attracts higher levels of savings from the household.

On the other hand, in our first leg and model the ratio of domestic savings to gross domestic product (SAGDP) is the dependent variable, while real deposit rate (RDR) represents real interest rate, prime lending rate (PLR), market capitalization as ratio of gross domestic product (MCGDP) and broad money supply as a ratio of gross domestic product (MSGDP), represent financial deepening in the capital and money markets respectively. The functional form for this first model whose variables are explained above is given as:

Model 1

SAGDP= f(RDR, PLR, MCGDP, MSGDP,) 1a

Where:

SAGDP = Savings deepening (the ratio of savings to gross domestic product)

RDR = Real deposit rate (real interest rate)

PLR = Prime lending rate (the interest rate paid for borrowed fund in the money market

MCGDP = Market capitalization as a ratio of GDP (capital market deepening).

MSGDP = Money supply as a ratio of GDP (money market deepening).

The econometric model to be estimated for this first model takes the form of

$SAGDP_t = \alpha_0 + \alpha_1 RDR_t + \alpha_2 PLR_t + \alpha_3 MCGDP_t + \alpha_4 MSGDP_t + \mu_t$ 1b

μ_t is the stochastic element

A priori Economic Expectations

The a priori economic expectations of the relationship between the explanatory variables and the dependent variable in model 1, are as shown below:

$$\alpha_1 > 0, \alpha_2 < 0, \alpha_3 > 0, \alpha_4 > 0.$$

From the theoretical view point increase in real deposit rate (RDR) is expected to increase SAGDP and thus positive, while increase in prime lending rate (PLR) theoretically decreases SAGDP and as such inversely related to it. Capital market deepening and money market deepening represented by MCGDP and MSGDP are both expected to increase SAGDP and lastly, financial liberalizationis expected to increase SAGDP.

Model 2

The second model is built on the premise that the liberalized financial system allocates the resources it has generated to more efficient investments. One indicator of such efficiency is that financial sector increase allocations to the private sector which is considered to be more efficient than the public sector. Thus, in this model credit to the private sector as a ratio of gross domestic product (CPGDP) is a function of the same set of exogenous variables as in model (1).The functional form of this model is as:

CPGDP = f(RDR, PLR, MCGDP, MSGDP,) 2a

Where:

CPGDP = Financial deepening (Credit to Private sector as a ratio of savings to gross domestic product)

RDR = Real deposit rate (real interest rate)

PLR = Prime lending rate (the interest rate paid for borrowed fund in the money market

MCGDP = Market capitalization as a ratio of GDP (capital market deepening).
MSGDP = Money supply as a ratio of GDP (money market deepening).

The econometric model is given as

$$CPGDP_t = \beta_0 + \beta_1 RDR_t + \beta_2 PLR_t + \beta_3 MCGDP_t + \beta_4 MSGDP_t + \mu_t \quad 2b$$

μ_t is the stochastic element

A prior Economic Expectations

The a priori economic expectations of the relationship between the explanatory variables and the dependent variable in model 2, are as shown below:

$$\beta_1 > 0, \beta_2 < 0, \beta_3 > 0, \beta_4 > 0.$$

From a priori economic expectation increase in real deposit rate (RDR) is expected to increase CPGDP through increase in savings and thus positive, while increase in prime lending rate (PLR) theoretically decreases CPGDP and as such inversely related to CPGDP. Capital market deepening and money market deepening represented by MCGDP and MSGDP are both expected to increase CPGDP and thus financial liberalization is expected to increase CPGDP.

Method of Data Analysis

As methods for data analysis, we make use of Engel-Granger cointegration/error correction mechansim. The choice of this method is informed by a leading argument that when the order of integration is the same, hence, it becomes imperative to explore Johasen cointegration/error correction approach. This justification is hinged on an implicit assumption that this approach gives realistic and efficient estimates and provides the basis to *reparameterize* the equation(s) into error correction mechanism. Given the above, the unit root test was conducted using the Augmented Dickey Fuller (ADF), the ADF unit root test is to ascertain the stationarity of the variables. The Engel-Granger cointegration test was also carried out to ascertain the existence of the long run relationship of the variables and, this is followed by the error correction mechanism (ECM) used for the adjustment of any short run disequilibrium to the long run equilibrium of the variables.

Results and Discussion

This section begins with descriptive statistics for each of the models in this study followed by the unit root test result using the Augmented Dickey Fuller (ADF) test to ascertain the stationarity and order of integration of the time series data. The Engel-Granger co-integration test is carried out to determine if long run relationship exist among the variables followed by the Parsimonious error correction model.

Model One

Table 2: Descriptive Statistics Analysis

	SAGDP	RDR	PLR	MCGDP	MSGDP
Mean	7.668776	6.587959	15.16163	8.342449	15.20000
Median	6.880000	4.190000	16.85000	3.880000	13.29000
Maximum	14.14000	18.80000	29.80000	39.95000	25.51000
Minimum	3.560000	1.410000	6.000000	0.270000	9.150000
Std. Dev.	2.765227	4.682846	6.094930	8.517280	4.443881
Skewness	0.664706	1.166306	0.050901	1.414381	0.525941
Kurtosis	2.442532	3.053839	2.333995	5.101561	2.066339
Jarque-Bera	4.242807	11.11478	0.926767	25.35433	4.038782
Probability	0.019863	0.003859	0.629151	0.000003	0.032736
Sum	375.7700	322.8100	742.9200	408.7800	744.8000
Sum Sq. Dev.	367.0311	1052.594	1783.112	3482.115	947.9078
Observations	49	49	49	49	49

Source: Authors' computation with the use of E-views9

The descriptive statistics show positive mean and median values for all the variables. The mean values were greater than their respective median values except for prime lending rate (PLR) which was less than its mean value. This implies that variables are expected to increase over the study period since the mean values are greater than the median values. However, the prime lending rate (PLR) was expected to decrease over the study period. The maximum value of the dependent variable is 14.14 while the minimum value is 3.56 and the standard deviation is 2.77 approximately. Skewness indicates values

greater than zero in all the variables implying that all the series are skewed to the right and have long right tail. The kurtosis which measures the peak or flat distribution of the series indicates that all the variables were moderately peaked and mesokurtic in shape and nature. The Jarque-Bera indicates that the error is normally distributed within the period under study.

Unit Root Test Result

The unit root test for stationarity of the series using the Augmented Dickey Fuller test is shown in Table 3 below.

Table 3: ADF Unit Root Test Results

Variables	ADF Statistics		Probability Values		Order of Integration
	Levels	1st Difference	Levels	1st Difference	
SAGDP	-1.391103	-7.669951***	0.5789	0.0000	I(1)
RDR	-2.220188	-2.171633**	0.2022	0.0302	I(1)
MCGDP	-1.813200	-6.893848***	0.3699	0.0000	I(1)
MSGDP	-2.313082	-7.477601***	0.1721	0.0000	I(1)
PLR	-1.686657	-10.89770***	0.4313	0.0000	I(1)

Notes: ***, ** and * denote rejection of the null hypothesis of stationary at the 1%, 5% and 10%, significance level, respectively. The null hypothesis is stationary around a trend and intercept.
Source: Authors' computation with the use of E-views9

The result of the unit root test revealed that all theseries were stationary after first difference. That is, all the variables were integration of order I(1). Consequently, we proceed to examine the long run status of the variables using the Engle-Granger cointegration test.

Cointgration Test Result

Table 4: Engle-Granger Cointegration Test Result
Series: SAGDP RDR MCGDP MSGDP PLR
Sample: 1970 2018
Included observation: 49
Null hypothesis: Series are not cointegrated

Cointegrating equation deterministic: C
Automatic lags specification based on Schwarz criteria (maxlag=9)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
SAGDP	-4.891910	0.0613	-27.79369	0.0662
RDR	-6.155600	0.0353	-28.48127	0.0340
PLR	-3.977020	0.4813	-14.24288	0.4838
MSGDP	-5.300146	0.0138	-29.30710	0.0133
MCGDP	-6.488202	0.0282	-38.58708	0.0221

*MacKinnon (1996) p-values.
Source: Authors' computation using E-views 9

The Engle-Granger single equation cointegration test result in Table 4 above revealed that both the tau-statistic and z-statistic coefficients were negative for all the variables and three (3) out of the five (5) variables including RDR, MSGDP and MCGDP had long run relationship as shown by the probability values. Since 60% of the variables are significant at the 5% level, we conclude that a long run relationship exists among the variables included in this model. This implies that SAGDP, RDR, PLR, MCGDP and MSGDP converge together in the long run in Nigeria.

Parsimonious ECM Result

The parsimonious error correction model results in Table 5, showed the short run dynamic explanatory variables. The coefficient of the error correction term (ECT) is found to be negative and statistically significant with a speed of approximately 0.26 or 26% of long-run disequilibrium adjusted from lagged period error shocks. The variables included in the model explained 0.69 or 69% of changes in the dependent variable SAGDP as revealed by the adjusted R-square. The entire model is seen to be 100% significant by the probability of the F-statistic. The Akaika Information Criteria (AIC) was used for model selection.

Table 5: Parsimonious ECM Result
Dependent Variable: D(SAGDP)
Method: Least Squares
Sample (Adjusted): 1975 2018
Included observations: 44 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.041928	0.139096	0.301431	0.7648
D(RDR)	0.187336	0.087108	2.150632	0.0381
D(RDR(-4))	0.255678	0.094001	2.188042	0.0351
D(PLR(-4))	-0.049415	0.042266	-1.169145	0.2498
D(MCGDP(-2))	0.088481	0.032341	2.735906	0.0095
D(MSGDP)	-0.404130	0.046705	8.652839	0.0000
ECT(-1)	-0.248324	0.114600	-2.166760	0.0368
R-square	0.733230		AIC	2.798171
Adj. R-square	0.692067		DW. Stat	1.629199
Prob(F-statistic)	0.000000			

Source: Authors' computation with the use of E-views 9

The results revealed that, change in current real deposit rate D(RDR) and its lagged value D(RDR(-4) were positive and statistically significant to SAGDP. This confirms the a priori economic expectation. Specifically, the coefficients of D(RDR) and D(RDR(-4)) imply that a unit increase in RDR increased SAGDP by 0.187336 and 0.255678 approximately 19% and 26% respectively within the period of this study. Following the objective of this study to examine the impact of financial liberalization on economic growth through the channel of savings, it is seen that increase in real deposit rate stimulates growth in saving in Nigeria. Lagged value of prime lending rate D(PLR(-4)) was negative affirming the a priori expectation but statistically insignificant to savings as a ratio of income (SAGDP). This implies that the cost of borrowing does not impact on savings in the economy. Change in the lagged value of capital market deepening D(MCGDP(-2)) was positive which also affirmed the a priori expectation and statistically significant to SAGDP. This implies that a unit increase in MCGDP increased savings in the economy (SAGDP) by

0.088481 approximately 9%. This calls for monetary authorities such as the Central Bank of Nigeria and the Security and Exchange Commission to deepen the capital market to stimulate more savings in the economy. Change in broad money supply as a ratio of GDPD(MSGDP) was however negativecontrary to the a priori expectation but statistically significant. The coefficient of -0.404130 implies that a unit increase in broad money supply in the economy decreased savings by approximately 40%. This impact is likely to be felt through higher prices of goods and services which retard household and business savings in the economy. It is therefore imperative that broad money supply as a ratio of GDP is checked to correct damaging effect on the gains of financial liberalization to savings and thus economic growth in Nigeria.

Post Estimation Results

For clarity of the behavior of the series used in this study and to ascertain the accuracy of the estimated results and their forecasting powers, this sub-section looked at the serial correlation, heteroscedasticity and CUSUM test for residual stability.

Table 6: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.143789	Prob. F(2,35)	0.8666
Obs*R-squared	0.358580	Prob. Chi-Square(2)	0.8359

Source: Authors' computation using E-views 9

The Breusch-Godfrey serial correlation LM test result in table 4.5 with a probability chi-square value of 0.8359 higher than the 0.05 or 5% level of significance retains the null hypothesis ofno serial correlation in the series.

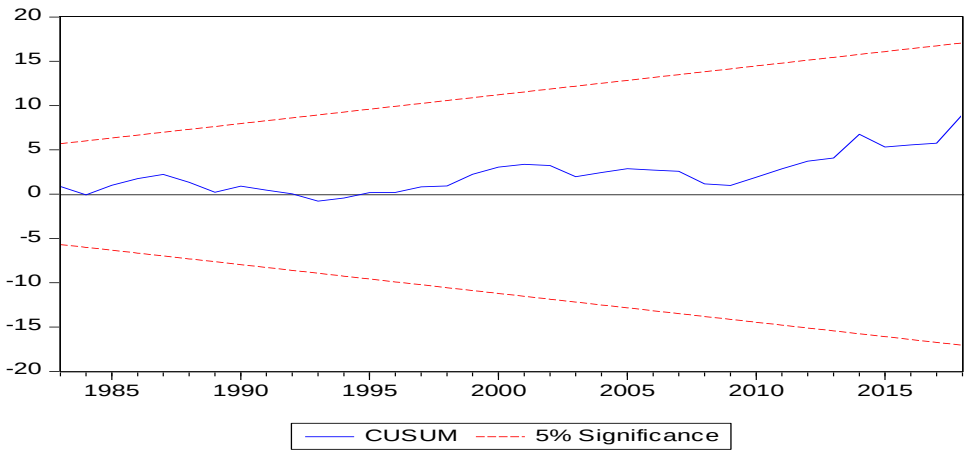
Table 7: Breusch-Pagan-Godfrey test for Heteroscedasticity

F-statistic	0.436005	Prob. F(6,37)	0.8500
Obs*R-squared	2.905522	Prob. Chi-Square(6)	0.8206
Scaled explained SS	4.794183	Prob. Chi-Square(6)	0.5705

Source: Authors' computation using E-views 9

Similarly, in Table 7 the Breusch-Pagan-Godfrey heteroscedasticity test showed that the probability chi-square results of 0.8206 and 0.5705 were both greater than 0.05 or 5% indicating the absence of heteroscedasticity in the series.

The CUSUM test result validate the null hypothesis that the residuals are stable, since the CUSUM line fell in between the two 5% lines as seen in figure 3 below.



Source: Authors' derivation using E-views 9

Figure 3. CUSUM test result for Residual stability

Model Two

Table 8: Descriptive statistics analysis

	CPGDP	RDR	PLR	MCGDP	MSGDP
Mean	10.74898	6.587959	15.16163	8.342449	15.20000
Median	8.200000	4.190000	16.85000	3.880000	13.29000
Maximum	20.80000	18.80000	29.80000	39.95000	25.51000
Minimum	5.100000	1.410000	6.000000	0.270000	9.150000
Std. Dev.	4.961440	4.682846	6.094930	8.517280	4.443881
Skewness	0.984881	1.166306	0.050901	1.414381	0.525941
Kurtosis	2.374824	3.053839	2.333995	5.101561	2.066339
Jarque-Bera	8.719559	11.11478	0.926767	25.35433	4.038782
Probability	0.012781	0.003859	0.629151	0.000003	0.132736

Sum	526.7000	322.8100	742.9200	408.7800	744.8000
Sum Sq. Dev.	1181.562	1052.594	1783.112	3482.115	947.9078
Observations	49	49	49	49	49

Source: Authors' computation with the use of E-views 9

The descriptive statistics show positive mean and median values for all the variables similar to model one. The mean values were greater than their respective median values with exception of prime lending rate (PLR) which was less than its mean value. This implies that the variables are expected to increase over the study period since the mean values are greater than the median values. However, the prime lending rate (PLR) was expected to decrease over the study period. The maximum value of the dependent variable is 20.80 while the minimum value is 5.10 and the standard deviation is 4.96. Skewness indicates values greater than zero in all the variables implying that all the series are skewed to the right and have long right tail. The kurtosis which measures the peak or flat distribution of the series indicates that all the variables were moderately peaked and mesokurtic in shape and nature. The Jarque-Bera indicates that the error is normally distributed within the period under study.

Unit Root Test Result

The unit root test for stationarity of the series using the Augmented Dickey Fuller test is shown in table 4.8 below.

Table 9: ADF Unit Root Test Results

Variables	ADF Statistics		Probability Values		Order of Integration
	Levels	1st Difference	Levels	1st Difference	
CPGDP	-1.614612	-3.764552**	0.4641	0.0287	I(1)
RDR	-2.220188	-2.171633**	0.2022	0.0302	I(1)
MCGDP	-1.813200	-6.893848***	0.3699	0.0000	I(1)
MSGDP	-2.313082	-7.477601***	0.1721	0.0000	I(1)
PLR	-1.686657	-10.89770***	0.4313	0.0000	I(1)

Notes: ***, ** and * denote rejection of the null hypothesis of stationary at the 1%, 5% and 10%, significance level, respectively. The null hypothesis is stationary around a trend and intercept.
Source: Authors' computation with the use of E-views 9

The result of the unit root test revealed that all thevariables were stationary after first difference. That is, all the variables were integration of order I (1). We therefore proceed to examine the long run status of the variables using the Engle-Granger cointegration test.

Cointgration Test Result

The Engle-Granger single equation cointegration test result in Table 10 below revealed that both the tau-statistic and z-statistic coefficients were negative for all the variables and four (4) out of the five (5) variables including CPGDP, PLR, MSGDP and MCGDP had long run relationship as shown by their probability values.

Table 10: Engle-Granger Cointegration Test Result
Series: CPGDP RDR MCGDP MSGDP PLR
Sample: 1970 2018
Included observation: 49
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministic: C
Automatic lags specification based on Schwarz criteria (maxlag=9)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
CPGDP	-5.312324	0.0520	-21.82805	0.0442
RDR	-2.956818	0.6307	-14.83212	0.6400
PLR	-7.710853	0.0029	-31.74545	0.0068
MSGDP	-6.263226	0.0185	-29.77214	0.0163
MCGDP	-6.561513	0.0431	-28.16915	0.0393

*MacKinnon (1996) p-values.
Source: Authors' computation using E-views 9

Since 80% of the variables are significant at the 5% level, we conclude that a long run relationship exists among the variables included in this model. This implies that CPGDP, RDR, PLR, MCGDP and MSGDP converge together in the long run in Nigeria.

Parsimonious ECM Result

From the parsimonious error correction model result in Table 11, the coefficient of the error correction term (ECT) is found to be negative and statistically significant with a speed of approximately 0.24 or 24% of long-run disequilibrium adjusted from lagged period error shocks as in the previous model. The variables included in the model explained approximately 0.83 or 83% of changes in the dependent variable CPGDP as revealed by the adjusted R-square which is an improvement over model 1. The entire model is seen to be 100% significant by the probability of the F-statistic. The Akaika Information Criteria (AIC) was used for model selection.

Table 11: Parsimonious ECM Result
Dependent Variable: D(CPGDP)
Method: Least Squares
Sample (Adjusted): 1975 2018
Included observations: 44 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.157933	0.144359	1.094030	0.2812
D(RDR)	0.233009	0.096481	2.415086	0.0209
D(PLR)	-0.051017	0.048571	-1.050365	0.3006
D(PLR(-4))	-0.054972	0.040464	-1.358517	0.1828
D(MCGDP(-2))	0.099641	0.033515	2.972983	0.0052
D(MSGDP)	0.591048	0.048787	12.11481	0.0000
ECT(-1)	-0.242418	0.071341	-3.398035	0.0017
R-square	0.855043		AIC	2.894698
Adj. R-square	0.826857		DW stat	1.831982
Prob(F-statistic)	0.000000			

Source: Authors' computation with the use of E-views 9

Theresults revealed that, change in real deposit rate D(RDR) is positive and statistically significant to CPGDP. This confirms the a priori economic expectation. Specifically, the coefficient of D(RDR) implies that a unit increase in real deposit rate increased CPGDP by 0.233009 or23%. Following the second objective of this study to examine the impact of financial liberalization on economic growth through credit to the private sector, it is

seen that increase in real deposit rate stimulates CPGDP in Nigeria. Change in prime lending rate D(PLR) and its lagged value D(PLR(-4)) were negative confirming the a priori expectation but were both statistically insignificant to CPGDP. This implies that prime lending rate does not have impact on credit to the private sector in the short run in Nigeria. Change in the lagged value of capital market deepening D(MCGDP(-2)) and D(MSGDP) were both positive and statistically significant to CPGDP. Specifically, a unit increase in MCGDP and MSGDP increased credit to the private sector (CPGDP) by 0.099641 and 0.591048 approximately 9% and 59% respectively.

Post Estimation Results

Table 12: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.362342	Prob. F(2,34)	0.6987
Obs*R-squared	0.918255	Prob. Chi-Square(2)	0.6318

Source: Authors' computation using E-views9

The Breusch-Godfrey serial correlation LM test result in Table 12 with a probability chi-square value of 0.6318 higher than the 0.05 or 5% level of significance retains the null hypothesis of no serial correlation in the series.

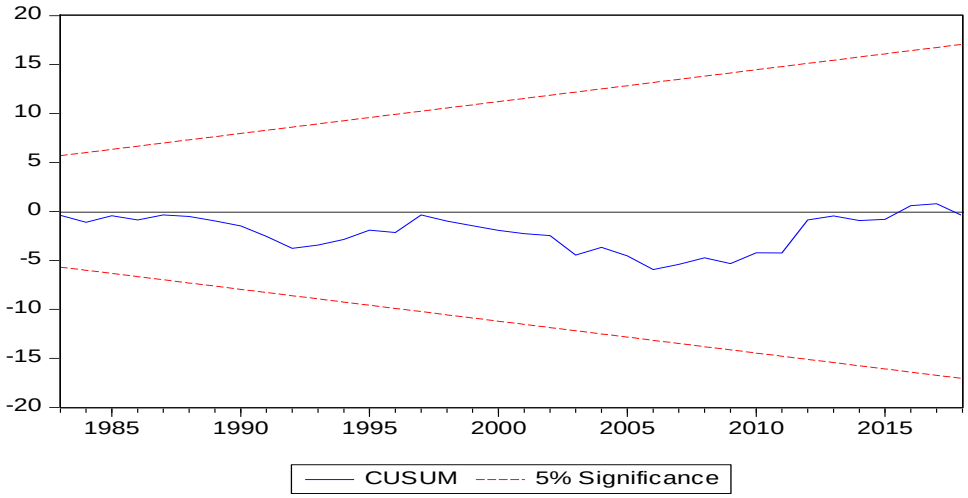
Table 13: Breusch-Pagan-Godfrey test for Heteroscedasticity

F-statistic	0.249777	Prob. F(7,36)	0.9690
Obs*R-squared	2.037997	Prob. Chi-Square(7)	0.9577
Scaled explained SS	2.820940	Prob. Chi-Square(7)	0.9011

Source: Authors' computation using E-views 9

Similarly, in Table 13 the Breusch-Pagan-Godfrey heteroscedasticity testshowed that the probability chi-square results of 0.9577 and 0.9011 were both greater than 0.05 or 5% indicating the absence of heteroscedasticity in the series.

The CUSUM test result validate the null hypothesis that the residuals are stable, since the CUSUM line fell in between the two 5% lines as seen in figure 4 below.



Source: Authors' derivation using E-views 9

Figure 4 CUSUM test result for Residual stability

Conclusion and Recommendations for Policy

There are two channels through which financial liberalization impacts on the performance of the economy in the McKinnon and Shaw (1973) financial repression thesis.This study verified the relationship between financial sector liberalization and economic growth in Nigeria following the McKinnon and Shaw thesis by developing two models with modifications. Induced savings through real interest rate and the efficiency of transmission channel are the two channels through which financial liberalization impacts on economic growth in the McKinnon and Shaw (1973) thesis. In the first model, savings as a ratio of gross domestic product (SAGDP) is a function of real deposit rate (RDR), market capitalization as a ratio of gross domestic product (MCGDP), broad money supply as a ratio of gross domestic product (MSGDP) and prime lending rate (PLR) while in the second model, credit to the private sector as a ratio of gross domestic product (CPGDP) is a function of the same explanatory variables in model one. All the time series variables were integrated of order one I (0) and showed evidence of long run relationship following the ADF unit

root and Engel-Grangercointegration tests respectively. The parsimonious error correction results revealed that in the first model, with the exception of prime lending rate, real deposit rate, market capitalization as a ratio of GDP and broad money supply as a ratio of GDP all impacted on savings. However, while RDR and MCGDP impacted positively on SAGDP, the impact of MSGDP was negative on SAGDP. The results of the second model on the other hand revealed that while RDR, MCGDP and MSGDP maintained significant impact on credit to the private sector as a ratio of GDP (CPGDP) with PLR negative and insignificant, MSGDP impacted positively on CPGDP.

Consequently, the study concluded thatthe impact of financial sector liberalization on the performance of the Nigerian economy is mixed. That is, while the significant positive impact of RDR on SAGDP indicates that financial liberalization stimulates growth in savings, the insignificant negative impact of prime lending rate on credit to the private sector indicates that financial liberalization does not stimulate credit to the private sector.

Recommendations for Policy

Based on the findings of this study, the following implications for policy are presented:

1. The Central Bank of Nigeria and the Securities and Exchange Commission shouldmandate the banks and the capital market to create more modern savings instruments with attractive interest rates particularly market based interest rates to attract more domestic and foreign savings in Nigeria. This it is believed will increase the volume of savings in the economy which would be further transmitted to productive investment and consequently increase the real interest rate paid on deposit.
2. The insignificant negative impact of the prime lending rate (PLR) on credit to the private sector is an indication that financial liberalization has no impact on credit to the private sector and thus impeded investment and growth of the economy during the period of study. Since this rate is determined by several factors including socioeconomic, political as well as the state of infrastructure and environmental factors, there is urgent need for governments at all

levels in the country to provide the enabling environment for business to thrive.

3. The significant negative impact of broad money supply on savings indicates that money supply erodes the value of money through higher prices which retard savings. Monetary authorities particularly the Central Bank have the imperative to determine an appropriate monetary policy rate that will keep both real deposit rate and the prime lending rate moderate. This will ensure that the prime lending rate is not too high to discourage borrowing for productive investment by the private sector and at the same time the real deposit rate is kept not too low to encourage saving.

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THE EFFECT OF TARIFFS ON NIGERIA'S FOREIGN TRADE

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Abstract

This study examined the effect of tariffs on Nigeria's foreign trade. The data for this study were from the Central Bank of Nigeria statistical bulletin between the period 1981 and 2018. The study used both descriptive statistics and the framework of Engel-Granger cointegration/error correction modeling for data analysis.The study used tariff, exchange rate, trade openness as explanatory variablesand non-oil export was used as the dependent variable which servedas proxy for trade.From the analysis carried out, the study found the existence of a long run relationship between the variables. Tariff and trade openness were both positive and significant impact on trade in Nigeria. On the other hand, exchange rate has a negative but insignificant impact on trade in Nigeria. Based on the findings, study recommended that higher tariff be imposed on imported goods in order to foster growth of selected industries that can produce such goods and that the economy be allowed some degree of openness to enable Nigeria export some of her goods to the rest of the world.

Keywords: Trade, Tariffs, Exchange Rate, Trade Openness

Introduction

International trade is regarded as a vital part of every nation's economic activities. It involves the transfer of capital, goods and services across international boundaries or borders. Arogundade, Obalade and Ogunmakin (2015) explained that international trade came to be as a result of the uneven and varying distribution of natural resources, technical knowledge, and climatic conditions in different part of world. As noted by Ricardo (1859)in his comparative advantage cost theory,that improvement in production of goods, transfer of technology, larger market and better living standards can only occur if countries focus their attention on producing and exchanging those goods in which their resources are best suited for (Bay, 2005; Arogundade, Obalade & Ogumakin, 2015).

In line with the above, one can say that the trade relation between Nigeria and other countries is an integral part of the nation's economy. Over the years, trade in the country has improved due to its multilateral ties with other countries. Notwithstanding, Adedayo (2006) opines that developing countries that want to fast track their economic growth and development should not adopt free trade since it is not the proper commercial policy for such countries. As a result of the above, some scholars have argued for protection. One of such protection instruments that are used in Nigeria is Tariff. Oladapo (2010) defines tariff as a tax that the state usually levies on commodities that are imported. Tariff is associated with protectionism which is an economic theory for preventing trades among nations.

Besides serving as a means of revenue generation for the government in several countries, tariff policy is also useful in achieving some policy objectives such as industrialization, rapid economic growth and development. This is achieved through the protection of production activities by infant industry, and substitution of imports (Akinlo, 1996; Arogundade, Obalade & Ogumakin, 2015).

Arising from the above, Alaba (2000) assert that Tariff has become very useful overtime, as an important discriminatory tool for the prevention of the importation of certain goods in Nigeria. On the other hand, the proponents of free trade view protectionism as a way to curb growth in industry. As a result, they argue that some industries have remained protected under the disguise of infant industry, hence making protectionism seem like a permanent feature. However, the effects of tariff as a form of protection on trade by Nigerian firms remain unclear. Given this concern, this study sets out to investigate the effect tariff on Nigeria's foreign trade. This paper is structured into five sections. These include: the introduction, literature review, materials and methods, results and discussions, and conclusions and recommendations.

Literature Review

This paper is anchored on trade protection theory. It explains a deliberate attempt to limit imports or promote exports by putting up barriers to trade. Despite the arguments in favour of free trade and increasing trade openness, protectionism is still widely practiced. The main arguments for protection are

that barriers to trade can be used to protect sunrise industries, also known as infant industries, such as those involving new technologies. This gives new firms the chance to develop, grow and become globally competitive. Protection of domestic industries may allow them to develop a comparative advantage. For example, domestic firms may expand when protected from competition and benefit from economies of scale. As firms grow they may invest in real and human capital and develop new capabilities and skills. Once these skills and capabilities are developed there is less need for trade protection, and barriers may be eventually removed. At the other end of scale are sunset industries, also known as declining industries, which might need some support to enable them to decline slowly, and avoid some of the negative effects of such decline.Barriers may also be erected to protect strategic industries, such as energy, water, steel, armaments, and food. The implicit aim of the Nigerian government to impose high tariff and ban importation of Rice is to boost local production and non-oil exports to foreign exchange by protecting the farmers and agricultural sector.

Few researchers have investigated the effect of tariffs on trade of countries. For instance; Adeoye and Ajuwon (2010) examined the possible impact of trade distortions captured by the nominal exchange rate on the growth of the Nigeria economy. The work adopted the Ordinary Least Squares (OLS) technique of multiple regressions to estimate the data. The result shows that one of the major distortions preventing the free flow of goods and services from the Nigerian economy is the vagaries in the behaviour of the exchange rate. Therefore, this paper supports the earlier hypothesis that trade libearlization in Nigeria has some negative impacts on the economy's growth level. This paper reiterates that until the distortions to trade are removed the economy cannot adequately benefit from the ongoing reforms in the real sector. It therefore recommends the need for the government to speed lip the process of domestic reforms. Government must accelerate reforms in trade and industrial policies along with macroeconomic policies that provide a favourable environment for enterprises competing in the global market, as well us attracting foreign investors.

Ezike and Ogege (2012), investigated Nigeria foreign trade policy and its impact on non-oil export. The study used both correlation analysis and least

square techniques. Their finding shows that there is a negative relationship between trade policies and non-oil export in Nigeria. However, non-oil export has positive effect on economic growth in Nigeria; also exchange rate is positive and significant at 5% level of significance. They therefore recommend that a country that diversifies its export base stand a better chance of achieving economic growth. Thus, a trade policy that focuses mainly on a mono-product in this case crude petroleum is flawed and exposes the country to instability and external shocks incidental to the global oil market. Nigeria would therefore be better-off if it makes effort to diversify its economy by encouraging production and exportation of nonoil products.

Employing the ordinary least square and using time series data from 1970 to 2006, David-Wayas (2015) investigated how trade barriers affects Nigeria's economic growth. The research findings revealed that total export, openness and tariff had positive effect on Nigeria's economic growth while total import and ratio of export to GDP had adverse effect on Nigeria' economic growth. The study concludes that economic growth in Nigeria is positively and statistically impacted on by trade barriers.

In another study, Okere and Iheanacho (2016) employed the autoregressive distributed lag (ARDL) bounds test approach to co-integration on data set from 1990 to 2013 to analyze how protectionist trade policy indirectly affects Nigeria's economic growth. The error correction model confirms the existence of a long run relationship between the variables. Empirical findings show that labour, unemployment, real GDP per capital and industrial production have no long run causal relationship, while there is a short run unidirectional causal relationship that flows from industrial production and unemployment to GDP per capital. Also, a unidirectional causal relationship flows from industrial production and GDP per capital to labour. The study therefore concludes that an indirect link exist between economic growth and protectionist policy in Nigeria. The link occurred through unemployment rate and industrial protection.

Yasiru (2017) investigated the impact of globalization on non-oil export performance in Nigeria. Using time series data, the paper employed the Autoregressive Distributed Lag (ARDL) approach to analyze the relationship between globalization and non-oil export performance within the periods of

1970 to 2014. The results revealed that there is a long-run relationship between globalization and non-oil export performance in Nigeria. The parameter estimates showed that globalization, official development assistance, investment and exchange rate have positive impact on non-oil sector export in Nigeria. In addition, gross domestic product and foreign direct investment have negative impact on non-oil sector export performance in Nigeria. The study concludes that the impact of globalization on non-oil export performance is a long-run phenomenon. Thus, the government should adopt and implement trade policies that are capable of sustaining non-oil sector growth in Nigeria.

Expressing concerns about the China-Us trade wars, Li, He and Lin (2018) empirically simulated the possible effects of China-Us trade wars by adopting a multi-country global general equilibrium (GE). Findings from the simulation show that the trade war would hurt the economy of China significantly, though with affordable adverse effects. On the other hand, a unilateral sanction measures on puts the US in a gaining position. However, retaliation measures by China hurt the US economy. Findings also show that, the US gains more than China under mutual trade war, and that the introduction of non-tariff barrier trade war further harms China as its negative effects are more to China than to the US. The study concludes that though the US has a stronger bargaining power than China, trade wars between both countries benefits the welfare of both countries while other countries are adversely affected.

Following the adoption of series of liberalization reforms simultaneously by member countries of BRICS from the late 1980s, Burange, Ranadive and Karnik (2019) examined the relationship between trade openness and economic growth nexusof BRICS member countries. It captures structural composition of GDP and openness of trade in four aspects, that is, merchandise exports, merchandise imports, services export and services import. In India, the study found growth-led trade in services hypothesis. Their finding supports the growth-led export and growth-led import hypothesis for China and export- and import-led growth for South Africa. However, no causal relationship was evident for Brazil and Russia.

Ikpe, Ojike, and Ahamba (2020) investigated in their study on whether trade liberalization policies enhance performance of non-oil export trade in Nigeria? The study adopted an Autoregressive Distributed Lag model approach to the analysis of the impact of trade liberalization policy on non-oil export trade. Evidence provided support for trade liberalization policy as the growth driver for non-oil export, a sector that exports more but earns little in terms of revenue. As a result, the study recommends a well thought-out public–private partnership arrangement for the efficiency of the private sector (a major player in non-oil export trade), to optimally harness the benefits of liberalization in Nigeria's non-oil trade sub-sector.

Summary of Literature Reviewed and Research Gap

From the review of literature, it was discovered that some scholars investigated how trade distortions or protectionism affects economic growth (Adeoye and Ajuwon, 2010; David-Wayas, 2014 and Okere and Iheanacho, 2016). Others like Oas (2014) and Aiyedogbon and Ohwofasasa (2016) examined how trade liberalization affects economic growth. This study defers from other scholars by examining the effect of tariffs on trade in Nigeria by regressing non-oil export (NOXP) a proxy for trade on tariffs (TARF), exchange rate (EXRC) and trade openness (TOPN) from 1981 to 2018. This is the gap the study filed in literature.

Method of Analysis

Specification of Model

The study adopted the protectionist theory and empirical model of Adeoye and Ajuwon (2010) with modifications as follows:

$$NOXP = f(TARF, EXRC, TOPN) \quad 1$$

The econometric model to be estimated takes the form of;

$$NOXP = a_0 + a_1TARF + a_2 EXRC + a_3TOPN + U_t \quad 2$$

Where:

NOXP = Non-Oil Export a proxy for trade

TARF = Tariffs

EXRC = Exchange Rate

TOPN = Trade Openness

U_t = Stochastic element

Thus, a priori expectations are TARF and EXRC < 0 while TOPN> 0

Data Sources and Estimation Technique

The data set employed in the empirical analysis of the model was sourced from the Statistical Bulletin of the Central Bank of Nigeria (various issues), relevant journals and from the database of other institutions. The data set span from the period 1981 to 2018. Tariff, trade openness and exchange rate are employed as the explanatory variables, while non-oil export as proxy for trade is employed as the dependent variable. The data was analyzed using both descriptive statistics and empirical analysis of ordinary least square (OLS) techniques such as the Engel-Granger co-integration and error correction modelling (ECM) technique.

Results and Discussion

The analysis of the time series data obtained for the study was done in five different stages. First we present the descriptive statistics, after which a unit root test was conducted in order to ascertain the stationarity of the variables. The co-integration test, error correction mechanism and diagnostics tests were also conducted to determine the effects of the independent variables on the dependent variable.

Descriptive Statistics

Here, we present the descriptive statistics of the data set in the table below.

Table 1: Results of the Descriptive Statistics

	LOG(NOXP)	LOG(TARF)	LOG(TOPN)	LOG(EXRC)
Mean	3.386694	4.211939	3.815346	3.429504
Median	3.353187	4.553031	3.946617	4.577656
Maximum	7.268362	7.090160	4.404399	5.726587

Minimum	-1.609438	0.482426	3.031099	-0.494296
Std. Dev.	2.819986	2.313968	0.410117	1.981207
Skewness	-0.264506	-0.243533	-0.570843	-0.754089
Kurtosis	1.864979	1.672495	2.017523	2.273799
Jarque-Bera	2.482865	3.165879	3.592125	4.436453
Probability	0.288970	0.205371	0.165951	0.108802
Sum	128.6944	160.0537	144.9831	130.3212
Sum Sq. Dev.	294.2359	198.1146	6.223245	145.2318
Observations	38	38	38	38

Source: *Author's Computation Using E-views 9.0*

From Table 1, the result shows that the standard deviation calculated for non-oil export was the most volatile in the series with a value of 2.819986 while state of trade openness was the least volatile variable with a value of 0.410117. The calculated values for the skewness statistic for all the variables – NOXP, TARF, EXRC, and TOPN were negatively skewed, suggesting that their distributions have a long left tail. Statistics of the Kurtosis of the variables indicate a platykutic mode of distribution. This implies that the distribution of the variables exhibit a flat trend as against the expected normal distribution. This suggests the presence of unit root and that the estimation of the variables would result to a spurious regression. The study therefore conducted the Augmented Dickey-Fuller unit root test, to test for the stationarity of the variables employed in the study

Unit Root Test

The results of the Augmented Dickey-Fuller unit root test as presented in Table 2 below reveals that all the choice variables TARF, TOPN, NOXP, and EXRC became stationary after their first difference.

Table 2: Result of the Augmented Dickey-Fuller Unit Root Test

Augmented Dickey Fuller (ADF) Test					
Variables	Level	5% Critical Values	1st Diff.	5% Critical Values	Order of Integration
LOG(NOXP)	-0.893786	-2.943427	-7.153737	-2.945842	I(1)
LOG(TARF)	-1.020547	-2.943427	-5.445160	-2.945842	I(1)
LOG(TOPN)	-0.712924	-2.963972	-5.438138	-2.945842	I(1)

LOG(EXRC)	-2.007005	-2.943427	-5.235013	-2.945842	I(1)

Source: *Author's Computation Using E-views 9.0*

Co-integration Test Result and Analysis

The co-integration test was conducted after establishing that the series are integrated of the same order, that is, of order one (1(1)). The Study employed the Engle-Granger two step co-integration procedures, and the result is presented in Table 3 below.

Table 3: Engle Granger Co-integration Test Results

Variable	Level	5% Critical Values	Order of Integration	Remarks
RESID(ECM)	-3.612505	-2.943427	I(0)	Co-integrated
Stationary at both 1%, 5% and 10% Level of Significance				

Source: *Author's Computation (2019)*

Results of the co-integration test show that the residual of the regression are stationary at the 5 percent level of significance. This implies that Tariff, exchange rate, and trade openness which serves as the explanatory variables are seen to be co-integrated with non-oil export in Nigeria in the period under review. Thus, there exists a long run relationship between the explained variable non-oil export and its explanatory variables tariff, exchange rate and trade openness.

Parsimonious Error Correction Model

In order to affirm the existence of a long-run relationship between the variables, we employed the error correction model technique. The result which is based on the principle of general to specific is presented in Table 4 below.

Table 4: Parsimonious ECM Result

Dependent Variable: DLOG(NOXP)				
Method: Least Squares				
Sample (adjusted): 1984 2018				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.143088	0.079769	1.793776	0.0837

DLOG(NOXP(-2))	0.169197	0.125253	1.350837	0.1876
DLOG(TARF)	0.697375	0.170218	4.096944	0.0003
DLOG(TOPN)	0.478522	0.265595	1.801698	0.0824
DLOG(TOPN(-1))	0.459901	0.268463	1.713089	0.0977
DLOG(EXRC(-2))	-0.249622	0.202991	-1.229717	0.2290
ECM(-1)	-0.583204	0.145662	-4.003822	0.0004
R-squared	0.583069	Mean dependent var		0.242067
Adjusted R-squared	0.493726	S.D. dependent var		0.452535
S.E. of regression	0.321992	Akaike info criterion		0.748274
Sum squared resid	2.903001	Schwarz criterion		1.059344
Log likelihood	-6.094797	Hannan-Quinn criter.		0.855655
F-statistic	6.526225	Durbin-Watson stat		1.797564
Prob(F-statistic)	0.000215			

Source: *Author's Computation Using E-views 9.0*

The result as presented in Table 4 above show that tariff has a positive and statistically significant relationship with non-oil export in Nigeria at the 5 percent level of probability. The sign of the coefficient of tariff conforms to a priori expectation. The result implies that a one percent increase in tariff leads to increase in Nigeria's non-oil export.

In addition, findings show that exchange rate has a negative but insignificant impact on non-oil export in Nigeria. It is observed that an appreciation of the exchange rate reduces the volume of non-oil export in Nigeria.

The result also revealed that trade openness has a positive but statistically insignificant impact on non-oil export in Nigeria. This suggests that as Nigeria opens her borders and trades with the rest of the world, non-oil export improves, though insignificantly in the period under review. The coefficient of trade openness is line with economic theory.

The adjusted R squared of 0.493 that the model accounted for on 49 percent of the variation in the explained variable non-oil export, and that the other 51 percent of the variations in non-oil export is accounted for by the error term or the white noise. The F-statistics of 6.526 indicates that the overall model is significant at the 5 percent level of significance and can be used for forecast. The sign of the error correction model is in line with a priori expectation and

shows that 58 percent disequilibrium in the non-oil export in previous year is corrected for in the current year. Finally, the Durbin-Watson statistics value of 1.797 indicates the absence of serial correlation or autocorrelation.

Diagnostic Test Results

The diagnostic tests conducted for this paper include the Normality test, the Serial Correlation test, Heteroscedasticity test and the Stability test. The normality test was conducted using the Jarque-Bera Statistics, while the Serial Correlation test was conducted using the Breusch-Godfrey Serial Correlation LM Test. The Breusch-Pegan-Godfrey test was employed in order to conduct the heteroscedasticity test, while the cumulative sum (CUSUM) and cumulative sum squared (CUSMSQ) test were conducted to test for the stability of the model. Results from Table 5 show that the estimated model scaled through the post estimation test. Figures 1 and 2 as presented below show that the plots of the cumulative sum and the cumulative sum squared lie within the 5 percent critical limit. This implies that the model passed the stability test as well.

Table 5: Diagnostic Test Results

Test	**Result**	**Prob.**
Normality Test	0.274493	0.8717
Breusch-Godfrey Serial Correlation LM Test	0.224775	0.8002
Heterosckedasticity Test	1.530899	0.2047

Source: *Author's Computation Using E-views 9.0*

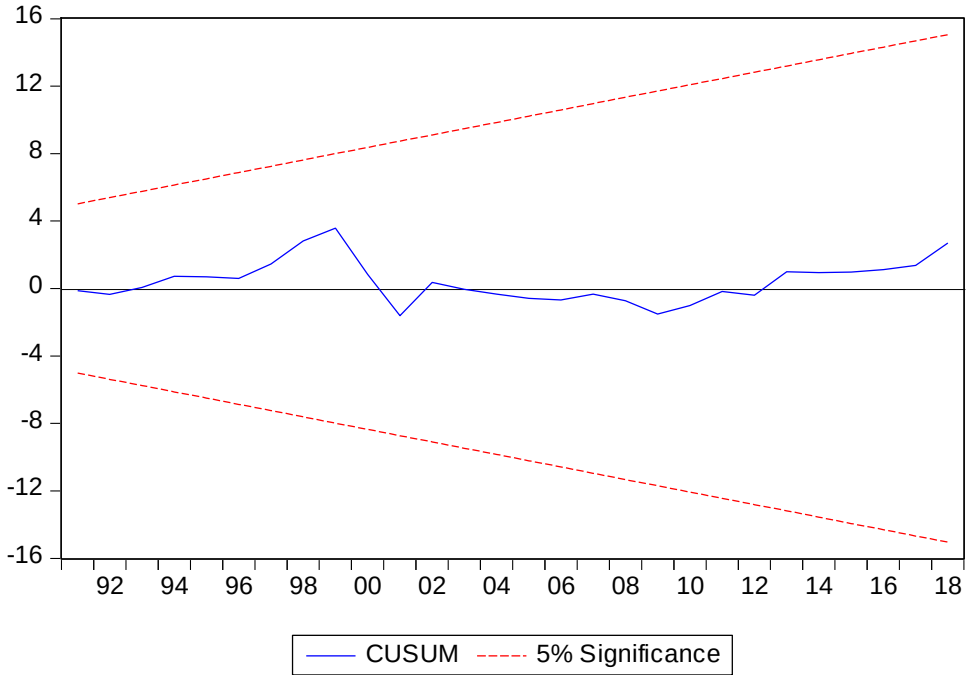


Figure 1: Stability Test Result based on CUSUM

Conclusion

This study empirically examined the effect of tariffs on trade in Nigeria from 1981 to 2018. The study employed both descriptive and empirical analysis. Data for tariff, exchange rate, trade openness and non-oil export were sourced from the statistical bulletin of the Central Bank of Nigeria. Findings from estimated model show the existence of a long run relationship between non-oil export and its explanatory variables. Tariff and trade openness are seen to impact positively and significantly on trade in Nigeria, while exchange rate has a negative and insignificant impact on trade in Nigeria.

From the findings above, the study makes the following recommendations:

- To foster growth in selected industries, government should impose tariff on importation of goods that can be produced by those selected industries.
- Tariff should also be imposed on goods that are perceived to endanger the population.

- Some levy of openness to trade should be allowed. This would enable Nigeria export some of her goods to the rest of the world.

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THE COVID-19 PANDEMIC OUTBREAK AND CONSUMER BEHAVIOUR: AN ONLINE SURVEY OF PEOPLE IN SOUTH-SOUTH NIGERIA

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Abstract

Nigeria had its first coronavirus disease (COVID-19) case on 27 February 2020 in an individual who returned from travelling overseas. Since then, cases of affected persons have steadily increased as the pandemic has spread to all states in the country. Containment measures by the Nigeria government to curb the spread of the virus ensured social distance and restricted the movement of persons and trade. However, it also disrupted the normal consumption habits of people. This study examined the effect of COVID-19 on the consumption behaviour of people in South-South region of Nigeria starting from the spread of the virus and the subsequent imposed lock-downs in most states of the country. The study utilised an online survey instrument and the sample period spans from 13 March 2020 to 30 June 2020. The data were analysed using Descriptive statistics and one-way ANOVA technique. The study reveals that Nigerians are aware of the outbreak of COVID-19 in the country and are mostly concerned about its effect on their health, personal finance and economy. Moreover, the pandemic has changed the daily spending habits of the people as e-payment rather than cash is preferred for making payments while physical transactions are preferred to e-commerce. In addition, the study shows that consumer spending for food, medicine, gasoline and sanitizers has increased beyond previous levels since the outbreakand there are significant differences in the rise in spending amongst age groups for food and medicine.The results are particularly relevant for government agencies saddled with designing fiscal and monetary policies to revamp the post COVID-19 economy. Based on the findings, the study recommends that the health sector be accorded the 15% minimum budget allocation stipulated by the World Health Organisation in order to meet the increasing demands for health services by Nigerians.

Keywords: Covid-19, Consumer Behaviour, Pandemic, South-South, Nigeria

Introduction

The scale of challenge an outbreak of infectious disease can create on the economy of the world has assumed new proportions with the unprecedented spread of the novel coronavirus (COVID-19). The COVID-19 outbreakwhich began in Wuhan-China has infected over 7 million people and killed more than 419,766 persons worldwide since its outbreak in November 2019 (World Health Organization, 2020). The coronavirus disease as COVID-19 is also called is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome and there is no clinically approved antiviral drug or vaccine that could be used against the disease (Shereen, Khan, Kazmi, Bashir& Siddique, 2020). In fact, the severity of the challenge posed by the outbreak of the pandemic on global tradeis appreciable when the number of countries that imposed partial/total shut-down of commercial activities and restrictedmovement of people in and out of their bordersto limit the rate of spread of the disease are appraised.

The COVID-19 outbreak is unprecedented as it is far more severe than the Ebola reported in 2014 given the death toll from the virus and its effect on the global economy. The effect of the epidemic is even more worrying when viewed within the contexts of mass poverty, poor health infrastructure, child malnutrition and high unemployment that continue to affect developing countries, hence, indicating its exceptional severity and magnitude.The association between health and economic growth is well established. It is noted that health is a key catalyst of income and economic growth, and a pandemic such as the COVID-19 could reduce investment, consumption expenditure and economic growth (World Bank, 2020).

In Nigeria, the outbreak of the pandemic has imposed substantial cost on the economy and health of the people given its poor infrastructure and weak health institutions.In particular, the COVID-19 disease is contagious, hence, government containment measures have emphasised the restriction of movement of persons and the promotion of social distancing measures. However, these preventive measures imposed direct and indirect costs on the economy. The direct costs include the restriction on transportation of people and goods, and reduction in supply, export, import and production activities.

Moreover, the government would incur cost in the implementation and enforcement of medical protocols to control the spread of the pandemic. These costs include the cost of hospitalization, costs of research and development of new therapies and vaccines. Direct costs also include out-of-pocket expenditures made by diseased households not covered by national health insurance schemes. Indirect costs arise as a result of aversion interventions that are either imposed by the government or self- imposed by the individual to mitigate the probability of contracting the virus. The result of all these costs induces both supply and demand shocks on the economy (Rima, 2020). Moreover, an economic valuation of the number of deaths as a result of the virus also places a high cost on the economy.

In effect, the outbreak of COVID-19 may impose substantial cost on the economy as people are likely to change their behaviour and lifestyle in the interim. Thus, although the pandemic is primarily a health crisis, it creates economic and social disruptions in the fabric of the society. Moreover, the restriction on gatherings and movements of people and goods enforced by the government may have repercussions beyond the direct impact on health. In fact, behavioural effects – related to the way risks are perceived and handled – can often be more significant from a socio-economic viewpoint than the effects of sickness and mortality themselves (Food and Agricultural Organisation, 2016). Similarly, the policy responses implemented to contain the outbreak and protect public health may send perverse signals to consumers that could impede on the performance of trade and investment activities and lead to higher indirect cost on the economy than the impact of the disease itself. Moreso, low income households and small businesses may be the worst-hit by such containment measures.

Moreover, the Nigerian economy has not recovered from the effects of the 2006 economic recession which crippled demand and supply activities. Consequently, it continues to grapple with high unemployment, poverty and poor health and social infrastructure. Therefore, the domestic spread of COVID-19 may worsen the precarious situation faced by the people and alter consumers spending behaviour, undermine consumer and business confidence and disrupt production activities with deeply negative consequences for the economy (World Bank, 2020). In addition, the government policy response to

the pandemic implicitly requires several adjustments in consumer behaviour. Hence, as people explore ways to mitigate the risks of contracting the virus, these behavioral adjustments could impact on the performance of the economy.Consequently, it is imperative to examine the effect of the COVID-19 pandemic on consumer behaviour in Nigeria.

Hypotheses

(i) There is no significant difference in the pattern of consumer spendings among age groups for food and medicine since the outbreak of Covid-19.

(ii) There is no significant difference in consumption expenditure level for both male and female since the outbreak of Covid-19.

The emphasis on the consumer is in recognition of the primary role of consumption expenditure in the economy growth of Nigeria, hence to address the foregoing hypotheses the rest of the study is organized in six (6) sections. Following the background to the study is the literature review in section 2 which discussed the history and spread of the novel coronavirus in Nigeria and reviews related literature while the research methodology is in section 3. Data analysis and discussion of findings is discussed in section 4. The conclusion and policy are contained in section 5.

Literature Review

Brief History of Covid-19 and its Spread in Nigeria

China's Wuhan city recorded the first confirmed case of COVID-19 before the global spread to other countries. The first case of the virus in Nigeria was identified on the 27th of February, 2020 in Ogun state from a foreign national working in the country. The index case was reported to have returned from a foreign trip. However, by the end of March, the virus had spread to the northern and southern parts of the country as eleven (11) more states had reported a case of the virus. The affected states and the number of cases are as displayed in table 1.

Table 1. States affected and number of laboratory confirmed cases as at March, 31st 2020

Lagos	Oyo	Osun	Ogun	Ekiti	Edo	Enugu	Rivers	Kaduna	Bauchi	Benue	FCT	TOTAL
82	8	5	4	1	2	2	1	3	2	1	28	139

Source: NCDC, 2020.

These early cases of the novel coronavirus were largely linked with travelling to high risk countries and contact with confirmed cases (Nigeria Centre for Disease Control, 2020). In the South-South region of Nigeria, the first case of COVID-19 was confirmed in Edo State on 23March 2020 from an individual that travelled to a high risk country. The first death from COVID-19 in Nigeria was reported on the 23rd of March at the Federal Capital Territory, FCT (Nigeria Centre for Disease Control, 2020). Accordingly, by the end of April, daily number of confirmed cases had exceeded two hundred as the virus spread to thirty-five (35) states. The rapid spread of the virus necessitated the response of both federal and state governments to safeguard the populace. In fact, as indicated in figure 1, at the end of June, Lagos state had more than 10,000 confirmed cases of COVID-19.

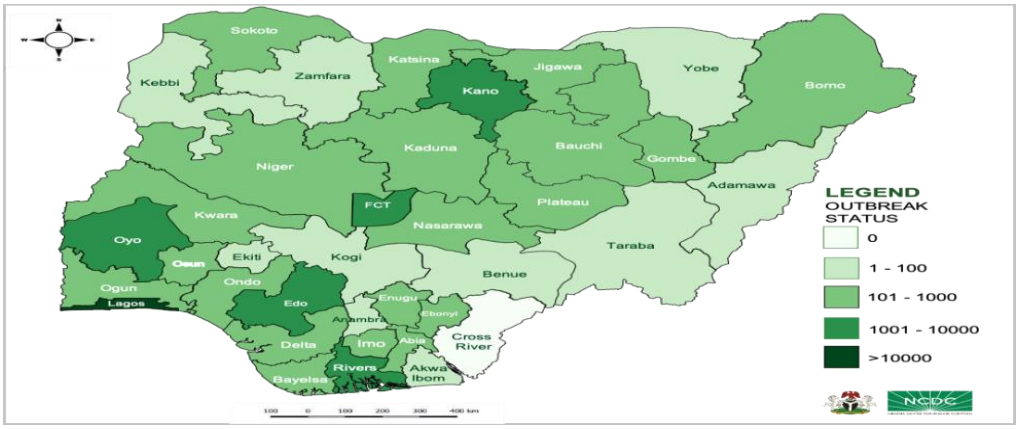


Figure 1: Spread of COVID-19 in Nigeria (30 June, 2020)
Source: NCDC, 2020.

The outbreak of the pandemic in Nigeria raises two main issues of concern. These issues are the gender and age-group most affected by COVID-19 in Nigeria. The NCDC (2020), affirms that confirmed cases of the virus indicate that people within the age bracket of 31-40 years contracted the virus more than other age-brackets.Moreover, male members of the populations contracted the virus more than their female counterparts. This outcome is important when viewed against the backdrop that the age bracket falls within the most active segment of the labour force in Nigeria. The COVID-19 virus can cause a range of symptom in people ranging from difficulty in breathing, fatigue and muscle ache (WHO, 2020).

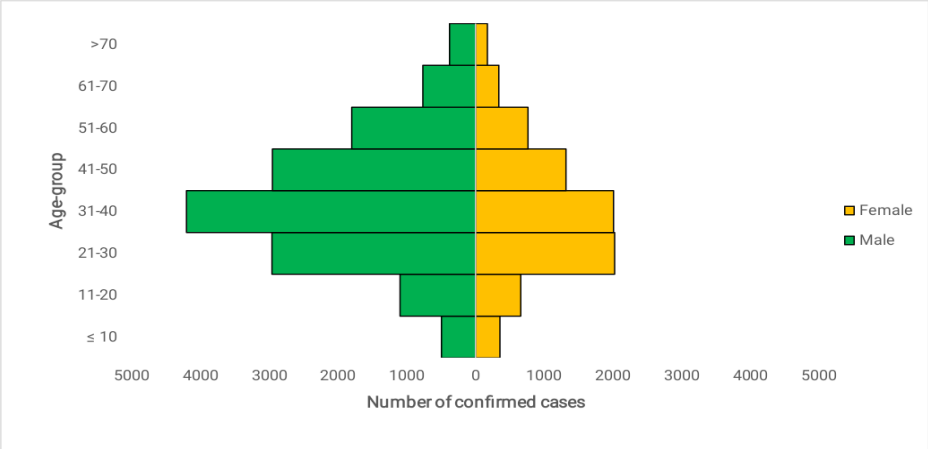


Figure 2: Age-Sex Distribution of Confirmed Cases (Week 19 – WeeK27)
Source: NCDC, 2020.

The labour force is the engine of economic progress in any country hence, distortion in the economy occasioned by an epidemic outbreak could reduce aggregate output through change in consumption behaviour of households. Accordingly, several policy responses have been specified by the federal and state governments to halt the spread of the pandemic. Though, the initial response by the federal government was focused on increased surveillance of all border entry points to ensure prevention and control of the spread of the virus. This was then followed by the restriction of movements in three states- F.C.T, Lagos and Ogun- on the 30th of March, 2020. Similarly, several states in the country also introduced restrictions barring inter-state movement of persons and goods and emphasized the importance of social distance to limit the spread of the virus. This policy response to the pandemic by the

government has effectively shut down most sectors of the economy, including industry, construction, education and transportation. However, these measures may have divergent impact on the consumption habits of younger individuals given their fluid lifestyles and older people.

Conceptual Literature

COVID-19

Coronavirus are a group of virus that can cause disease in both animals and humans. A good example of this type of virus is the Middle East Respiratory Syndrome coronavirus (MERS-CoV) strain that impacted South Korea in 2015. However, this strain of the coronavirus is new and was first identified in December 2019 in Wuhan, Hubei, China. The World Health Organisation (WHO) officially called the virus "COVID-19", on 11 February, 2020. The name reflects the type of virus and the year the strain was first noticed in the world (Wikipedia, 2019).

World Health Organisation (2020) designated the disease a pandemic due to its rapid spread across national borders and among human beings. The disease is most contagious when a person's symptoms are at their peak. Furthermore, the spread of the virus is made easy via contact with small droplets from infected persons especially when they cough, sneeze, talk or sing (Centers for Disease Control and Prevention, 2020). In addition, the spread of COVID-19 could also be indirect when people do not wash their hands after trade or socializing (Centers for Disease Control and Prevention, 2020).

The emergence of the virus has impacted severely on the behaviour of consumers and the economic expectations of most countries of the world with notable changes in how people socialize and engage in physical trade and commerce activities. These direct changes in the flow and interaction of people are sustained by containment measures put in place by national governments all over the world.

Consumer Behaviour

Behaviours that are displayed by an individual while buying, consuming or disposing any particular product or service is referred to as consumer behaviour (Solomon, 2009). A consumer is motivated by several factors in the

decision to purchase goods or services. The study of the motivations that surround the buying behaviour of consumers is the objective of consumer behaviour.

The concept of Consumer behaviour seeks to find answers to why, where and how people purchase goods and services in the way they do and the underlying factors that influence such decisions made by consumers. Ramya & Mohammed-Ali (2016) have listed factors that determine buying behaviour of consumers to include; social factors, cultural factors, economic factors and personal factors.

The outbreak of the COVID-19 disease imposes on individuals not only the need to be concerned about their personal safety but raises cultural, social as well as economic implications on the buying behaviour of consumers and economic growth.

Theoretical Literature

A number of theories have been used to explain consumer behaviour and the factors that influence consumer spending with the earliest theory anchored on the desire for utility. These theories are basically an extension of postulations about human behaviour. This paper examines three approaches that are used to explain consumer behaviour.

Marshallian Utility Theory

One of the oldest approaches used to explain consumer behaviour is the theory of utility which proposes that consumers are rational, hence they are capable of making choices regarding the combinations of goods and services that maximizes their utility. This approach assumes that the consumer has full information on the consumption bundles at his disposal and could consistently order his preferences in such a manner that enable the realization of an optimum combination. Moreover, the theory assumes that self-interest is a core instinct of consumers therefore their consumption behaviour is driven by the desire to obtain maximum utility at minimum cost. The utility approach however fails the reality test as people are not in possession of adequate information, motivation or the luxury of time to make such a ‘perfect’ decision that ensure that their consumption bundles are always optimized. Moreover,

consumer decisions are often acted upon by less rational influences such as social relationships and values (Simon 1997). Accordingly, the application of the theory may be constrained in a pandemic outbreak especially in developing countries. Infact, the restrictions placed on movement of people and markets in the event of an outbreak of disease could limit the ability of people to attain the most optimum outcome.

Satisficing Theory of Consumer Behaviour

Simon (1956) propounded the satisficing theory to explain consumer behaviour. The theory asserts that consumer buying decision is bounded rational, hence people tend to make consumption decisions by satisficing rather than finding optimal combinations. The theory opines that given the cost of obtainingoptimal solutions, consumers would rather choose options that meet their basic criteria. That is, satisficing consumers opt for good enough combinations of goods and services and not necessarily the optimal choice in their decision making.The satisficing theory of consumer behaviour highlights the imperative of time in decision making in conditions where an optimal solution cannot be determined. In addition, it indicates the ability of satisficing consumers to change their consumption behaviour if current situations do not guarantee satisfactory outcomes in search of other satisficing alternatives.

Theory of Reasoned Action (TRA)

The theory of reasoned action was originated by Fishbein (1967) but reviewed and expanded by Ajzen and Fishbein (1980). The theory affirms that intention is a key determinant of individual behaviour and could predict why a person behaves in a certain way and at a specific time and place. In the TRA, an intention is like a plan or set of actions conceived by the individual that may/may not be executed. The TRA argues that intention to execute an action is a function of two important constructs, namely, attitude and subjective norms. That is, the attitude of the individual towards the behaviour (action) and the subjective norms of groups that could influence the attitude. Ajzen (1985) states that attitude towards a certain behaviour is influenced by beliefs about the outcome and evaluation of the eventual outcome. The attitude construct is an immediate antecedent that predicts an individual’s intention to

engage in certain behaviours. On the otherhand, subjective norms are shaped by the perceptions and beliefs of the social system to which the individual belongs. Subjective norms relate to how the individual perceives the beliefs of important people such as parents, friends and colleagues about the behaviour. Subjective norms are defined by the approval or disapproval of certain behaviour by important persons or groups and therefore act as an immediate antecedent to an individual's intention to engage in certain behaviour (Ajzen, 1991). It denotes the perception of the individual about social and group response to perform the behaviour.

The theory of reasoned action emphasizes the importance of understanding the attitude and norms that influence the intent to engage in certain consumption behaviours and has been applied in the numerous studies, includingconsumer brand loyalty (Lyong Ha, 1998) and health behaviour (Albarracin, Johnson. Fishbein and Muellerleille (2001).

Theory of Planned Behaviour (TPB)

The TPB is an extension of the theory of reasoned action. The theory adds one more factor to the theory of reasoned behaviour which is perceived behavioural control. Perceived behavioral control represents the presence of factors that may facilitate or impede the performance ofa behaviour of interest. It represents the individual's perception of the level of difficulty or ease in performing the required behaviour of interest (Redda, 2019). The TPB theory holds that attitude toward certain behaviour, subjective norm and perception of behavioral control are the formative blocks of behavioural intention. In this way, the more favourable these three factors are to a certain course of action, the stronger is the probability for an individual to behave accordingly. Moreover, since behavioural intentions significantly influences individual behaviour, the TPB predicts that the stronger an intention to perform a task, the greater the likelihood that the task will be performed by the individual. The TPB model has been used to investigate why people fail to adhere to COVID-19 preventive behaviours (Chan, Zhang, and Weman-Josefsson, 2020).

Empirical Literature

The outbreak of the coronavirus has reinforced the interest of scholars on the study of consumer behaviour in a pandemic situation.Asante and Mills (2020) explored the socio-economic impact of COVID-19 pandemic in market places in urban Ghana using descriptive analysis. The research indicated that Ghana's COVID-19 pandemic mitigation measures in marketplaces were focused mainly on disinfection of markets, enforcement of social distancing among traders, and imposition of partial lockdown to marketplaces. The study observed that due to the spatial, economic, and social micro-geographies of marketplaces in Africa, implementation of the containment measures will pose a challenge to government and leaders of market unions. The study notes that the enforcement of social distance measures in markets have impacted on the socio-economic conditions of traders in ways that includes, increased food prices, economic hardship, forceful relocation and decongestion of markets. Consequently, by extension, these have impacted on the level of income of traders and their consumption habits.

Kuruppu and De Zoysa (2020) studied the relation of COVID-19 and panic buying. The study utilized a quantitative approach. The findings indicated that excessive information (rumours and mis-information) circulated through social and news media outlets were significant determinants of consumer panic buying globally. The study noted that individual behaviour such as heuristic, availability heuristic, loss aversion, regret aversion, risk aversion, framing, hoarding, herding and band wagon effect contributed to panic buying in the early period of the pandemic.

Chronolopoulos, Lucas and Wilson (2020) investigated consumer spending responses to the COVID-19 pandemic in Great Britain. The study used transaction level dataset of 101, 059 people and 23 million transactions. The findings showed that discretionary spending declined prior to the announcement of lockdown measures by the government and had continued to decline during the lock down period. In addition, there was evidence of increase in spending on groceries consistent with panic buying and consumer stock piling behaviour in the two-weeks after the categorization of COVID-19 as a pandemic by the World Health Organisation. The study also observed that

differences in consumer spending exist across nations and regions, age, gender and income levels.

Bounie, Camara and Galbraith (2020) examined the relation of consumers' mobility, expenditure and offline substitution response to COVID-19 in France. Their study utilised transaction data for about 5 billion card transactions made in France. The sample period was divided into two frames: the first covering the time before the lockdown and the second representing the period of the lockdown imposed by the government of France. Their findings indicated that most consumers used their automated cards in less location and across a small number of retailers following the imposition of containment measures by the government. The study further observed that the decline in offline spending was twice the decline in online spending.

Chen, He, Hsieh and Song (2020) studied the economic effects of lockdown measures in China. The study which focused on the impact on Wuhan and Hubei province examined the monthly sales records of products of a major e-commerce platform. The outcome showed that there was a significant change in consumer behaviour in favour of food and groceries as against digital and electronic goods. Moreover, the study further showed that the impact of lockdown measures in the province on the movement of people and goods and on aggregates output was immediate and intense.

Chauhan and Shan (2020) investigated consumer sentiments, media consumption habits and consumer behaviour during the COVID-19 outbreak in India using frequencies and percentages as well as Analysis of Variance (ANOVA) approach. The study which focused on media consumption habit of Indians in the midst of the pandemic observed that spending decisions were the same across gender and there were significant differences in the size of consumption across age groups. In addition, the study further revealed that the level of discretionary spending had declined after the outbreak of the pandemic.

Allam, Abdelrhim and Mohammed (2020) examined the effects of the spread of the pandemic on investor trading behaviour in the Egyptian stock exchange. The analysis utilised daily cases, total cases, daily deaths and total deaths from COVID-19 in Egypt as independent variables and daily trade volume on the

Egyptian stock exchange as dependent variable. The data had a span of four months beginning from March 1- 30 June, 2020. The results indicated that the trading behaviour of investors was sensitive to the spread of the pandemic. In particular, the study observed that the behaviour of Egyptian investors continue to actively circulate unlike other Arab and foreign investors in the stock exchange.

Chen, Qian and Wen (2020) studied the impact of the COVID-19 pandemic on consumption behaviour using high frequency transaction data for China. The daily transaction data covered 214 cities and was collated for 12 weeks during the early period of the outbreak. The outcome of their analysis shows that consumption declined by an average of 32% across cities in China. Moreover, change in consumer consumption behaviour was more significant in heavily impacted cities such as Wuhan.

Edomah and Ndulue (2020) investigated the impact of containment measures in Nigeria on electricity consumption behaviour. The study utilised data representing 259 electrical feeder locations under three scenarios: normal period prior to lockdown, period of partial lockdown and during total lockdown. The study used Lagos as a case study. The findings show that aside the announcement of the lockdown by the government which impacted on electricity consumption behaviour of people, certain social practices further triggered changes in electricity consumption and use leading to momentary energy transition. These factors in the residential sector are increased cooking, home laundry and showering and professional practices that were moved to the home front. In the industrial sector, they include reduced use in food processing companies, personal care and pharmaceutical production.

Andersen, Hansen, Johannesen and Sheridan (2020) used transaction-level bank account data from a large Danish bank to examine consumer responses to the COVID-19 pandemic. The study found a decline in spending following the onset of COVID-19 in Denmark. Specifically, the study noted that that aggregate card spending declined by approximately 25% following the government shutdown. Moreover, the observed decline in spending is more concentrated on product categories where trading is restricted under the terms of the government shutdown.

Similar studies were also carried out by Hojin, Minjae and Kihoon (2016) in South Korea. Their study investigated the impact of an epidemic outbreak on consumer expenditure using scanner panel data on consumers' debit and credit card transactions. The outcome indicates that disease outbreak disrupts consumer expenditures as people are likely to alter their consumption behaviour to reduce the risk of infection. The authors observed that the estimated effects of an epidemic outbreak are qualitatively different from that of other macroeconomic factors.

In conclusion, there is an unending interest among scholars on the impact of COVID-19 on the behaviour of consumers and the economy. Moreover, the findings across countries have not been consistent, hence the relevance of this study.

Methodology

Study Area

The research area of study is the South-South region which is one of the six geo-political zones in Nigeria. The South-South region consists of Six (6) out of the 36 federating units in Nigeria and they are Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers State. The region is ethnically diverse with a multiplicity of languages, though the people have significant similarities in culture, folklore and occupation. Consequently, the choice of the study area was informed by the need to examine the effects of COVID-19 on the behaviour of consumers in a region with historically connected traditions, lifestyle and occupation.

The traditional occupation of people in the region is predominantly farming and fishing. Large plantations are mostly owned by cooperatives and government. However, subsistence farming and fishing activities as practiced by rural dwellers continue to dominate agricultural practices in the region. Moreover, the main farm crops are cassava, yam, rice, plantain, maize, banana and palm produce, while mineral resources in the region include crude oil, lime stone, titanium, tin ore and ceramic raw materials.

Research Instrument

The study adopted the convenience sampling method to source for primary data. The primary data was based on an online survey directed to respondents using a structured questionnaire from March 13 to June 30, 2020 during the first four months of the outbreak of the pandemic that began in Nigeria on the 27th of February, 2020. The online survey instrument was administered through Google questionnaire forms. This online survey method is appropriate as it is a cost effective method of reaching a wide number of respondents in a pandemic period without increasing their risk of exposure to the virus.In addition, the online survey instrument was disseminated through various social media platforms including face book (https://www.facebook.com) and WhatsApp groups. The choice of these social media outlets was justified by its high number of users in Nigeria.

The questionnaire consisted of 23 one option and multiple questions structured in 5 sections: (1) Socio-demographic particulars (2) Awareness and key concerns about the pandemic (3) Consumption habits, and behavior of Nigerian consumers amid the coronavirus (COVID-19) outbreak. (4) Change in consumption pattern of households and (5) impact of COVID-19 consumer behaviour. The response of respondents to the research instrument was measured on a 5 point Likert scale anchored as Strongly Disagree (1) to Strongly Agree (5).

Participants

The population for this study comprises residents of the six (6) states in South-South Nigeria during the first four months (March-June) of the COVID-19 pandemic. The targeted population includes people with different educational background, occupation and marital status that engage in buying and selling activities. Furthermore, a total of 345 participants completely responded to the online questionnaire instrument out of the 379 responses received on the last day, 30th of June, 2020.

Validity and Reliability of the Research Instrument

A pilot test was conducted on 20 respondents from the sampled population for the purpose of establishing the validity of the research instrument before administering online to the targeted respondents. The results of the pilot test were used to correct vague questions noticed in the first draft. The content validity of the instrument was assessed by scholars in the Department of Economics, Federal University Otuoke. Moreover, the Cronbach Alpha was used to verify the internal consistency of the scale. It indicated a range of value between 0.65 to 0.74.

Method of Data Analysis

The study employed descriptive statistics in the analysis of the findings of the research. The objective is to draw inferences from the respondents' consumption behaviour. Moreover, the One-way ANOVA is used for the analysis of the data. The purpose of the ANOVA technique is to validate or invalidate the formulated hypotheses. The ANOVA technique was conducted to explore differences in change in consumption expenditure for medicine and food on consumer behavior across age groups andalso explore the differences in change in consumption habits and its impact on consumer behavior across different gender groups.

Results and Discussion

The questionnaire was collated and checked for completeness of response. Thereafter, the data was edited and coded to enable easy tabulation. The results are analysed in frequencies and percentages as presented in the following tables.

Table 2: Demographic Profile of Respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	183	53.0	53.0	53.0
	Female	162	47.0	47.0	100.0
Agegroup					

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-24	56	16.2	16.2	16.2
	25-29	65	18.8	18.8	35.1
	30-34	60	17.4	17.4	52.5
	35-39	58	16.8	16.8	69.3
	40-44	76	22.0	22.0	91.3
	45-Above	30	8.7	8.7	100.0
	Total	345	100.0	100.0	

Source: Online Survey, 2020.

Accordingly, Table 2 indicates that 53.0% of the response to the online questionnaire was from male respondents while 47.0% were retrieved from female respondents respectively. This indicates that response to the online survey cuts across both gender groups and the size of the male respondents may be suggestive of the cultural setting which places economic responsibility of the household more on male folks. Moreover about 22.0% of the responses received were from people within the age bracket of 40-44 years. Also, 18.8% and 17.4% of the respondents were within the 25-29 and 30-34 respectively.

Table 3: Respondents Estimated Monthly Expenditure

Expenditure Groups (‘000)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-49	148	42.9	42.9	42.9
	50-79	90	26.1	26.1	69.0
	80-109	76	22.0	22.0	91.0
	110-Above	31	9.0	9.0	100.0
	Total	345	100.0	100.0	

Source: Online Survey, 2020.

Table 3 shows the monthly expenditure estimate of respondents to the online questionnaire. The table indicates a dis-similarity in household monthly expenditure among the respondents. It shows that 42.9% of the respondents had monthly expenditure of not more than N49,000 while 26.1% and 22.0% spend between 50-79,000 and 80-109,000 monthly on consumption of goods and services.

Objective One: What is the level of awareness of people and their concerns as regards the outbreak of Covid-19?

The outbreak of the COVID-19 pandemic could affect the health and lifestyle of people given it is viral nature. The perception of respondents to the epidemic is indicated in Table 4.

Table 4: Respondents Perception of the COVID-19 Pandemic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Aware &unconcerned	5	1.4	1.4	1.4
	Aware &skeptical	23	6.7	6.7	8.1
	Aware &very concerned	317	91.9	91.9	100.0
	Total	345	100.0	100.0	

Source: Online Survey, 2020.

Table 4 shows that most people are very concerned about the occurrence of the virus in Nigeria. The survey indicated that 91.9% of the respondents viewed themselves as very concerned about the effect of COVID-19 on their wellbeing. Also, 6.7% were aware but skeptical of information on the virus while 1.4% rated themselves as unconcerned. The findings thus show that most of the sampled population are not only aware of the outbreak of COVID-19 in Nigeria but are very concerned about its implications. Respondents also indicated that radio, television, Newspapers, NGO leaflets, social media, short message services and community town criers were avenues that generated their awareness of the virus.

Furthermore, the main concern of respondents as awareness of the effects of COVID-19 spreads in the country is as inferred in Figure 3. It indicates that majority of the sampled population wheremore concerned about the impact of the pandemic on their health, personal income and national economy. This finding is critical as it indicates that though the problem imposes a challenge to the health of people, permanent income level of households could be depleted especially for poor people given the lull in most sectors of the economy as a result of the pandemic.

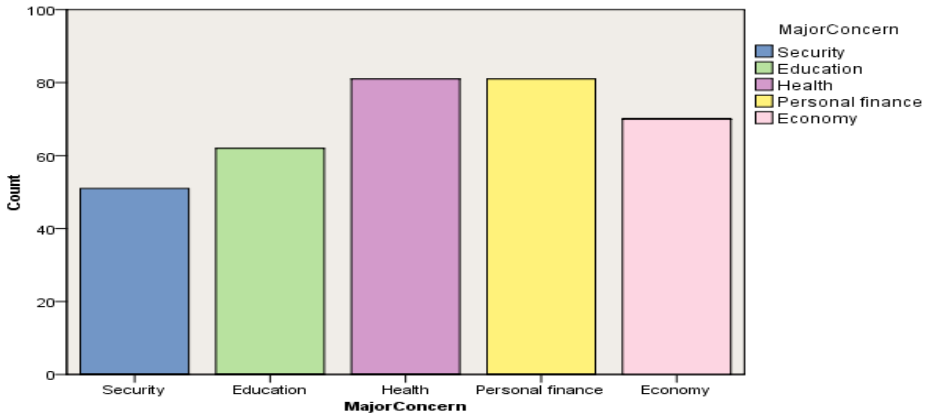


Figure 3. Areas of Major Concern to Respondents
Source: Online Survey, 2020.

Question Two: To what extent has the outbreak of COVID-19 affected household consumption habits?

The response of the sampled population to the question is indicated in figure 3. The diagram shows five areas of frequent activities in a household.

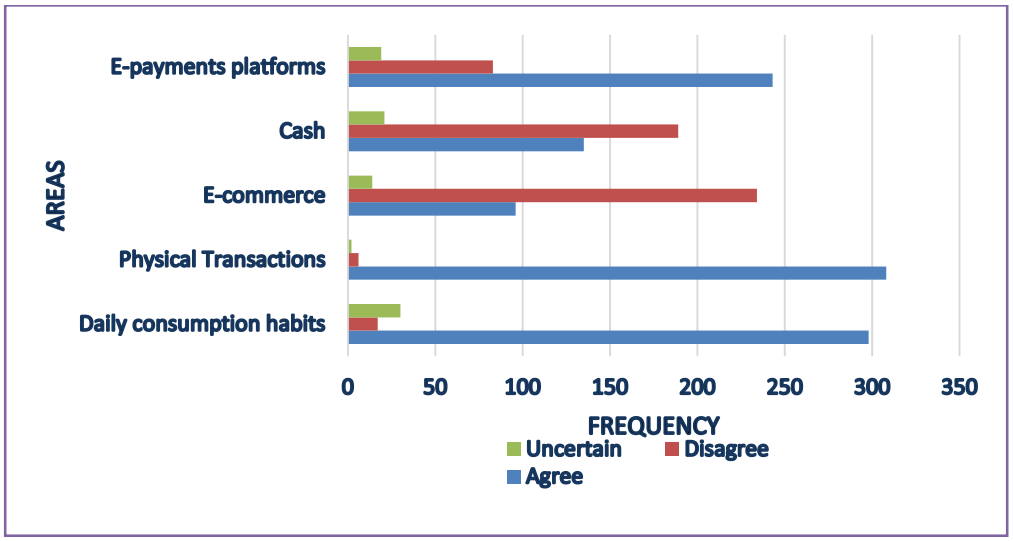


Figure 4. Perceived Changes in Consumption HabitsSource: Online Survey, 2020.

As inferred from figure 3, most respondents agree that their daily consumption habits have changed since the outbreak of the COVID-19 in the country. This may be related to the fact that the government restrictions compelled non-

essential workers and school children to remain at home. Hence, daily consumption habits of the household could likely be impacted. Physical transactions are still the prevalent mode used in consumption activities, though about 94 respondents affirm their use of e-commerce for shopping in the period of COVID-19.Furthermore, most respondents rely on e-payment platforms (debit card, credit card, bank mobile sort codes, etc.) than cash to make payments for their purchase of goods and services. This outcome could be due to the need to reduce physical contact and maintain social distance which e-payment promotes better than physical cash transactions. Moreover, the use of cashless methods eases payments for transactions that are large in volume and reduces the time required for handling cash.

Question Three: What is the buying behaviour of consumer in the COVID-19 period?

Table 5: COVID-19 and Percentage of Increase in Respondents Buying Behaviour

Goods & Services	**0-35%**	**36-70%**	**71% or more**	**Uncertain**
Food & Groceries	53	72	220	0
Electricity (Gasoline)	132	168	42	3
Medicine	84	109	146	6
Pay Television	98	188	46	12
Fitness & Well	76	53	21	195
Social Media	104	126	78	37
Sanitizers and Agents	117	178	45	5
AVERAGE	**94.857**	**127.714**	**85.429**	**36.857**

Source: Online Survey, 2020.

Table 5 shows the response of the respondents to the question pertaining buying behaviour in the midst of the COVID-19 pandemic. The table indicates that 53 respondents assert their expenditure on food and groceries has increase about 35% while 220 respondents observedan increase not below 70%. Moreover, 109 respondents believed that spending on medicine has increased between 36-70% and 6 were uncertain as to the percentage increase in their medical expenditures. Social media expenditures have also increased to about 0-35% for 104 respondents and 36-70% for 126 respondents. The social media

is a veritable platform for information and communication for most people. Hence, the increase in spending could be attributed to the need to not only stay inform but propagate positive energy among friends and family members using the communality afforded by the social media in the midst of COVID-19. On the average, 95, 128 and 85 respondents believed that their spending on goods and services have increased by 0-35%, 36-70% and 70% or more respectively. The increase in spending for food, medicine, sanitizers, etc. may be due to the need to stock essential goods for household use in anticipation ofunforeseen circumstances. However, this could be unsustainable for poor households in the long run and erode their savings.

Question Four: Is their difference in consumption expenditure across age group and gender due to COVID-19?

The Analysis of Variance (ANOVA) was used to ascertain whether there are differences in the increase in consumption expenditure on medicine and food across age groups.

Table 6: ANOVA[a]

Medicine

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	87.756	2	43.878	4.838	.008
Within Groups	3101.797	342	9.070		
Total	3189.554	344			

Table 7: ANOVA[b]

Food

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.710	2	8.855	5.119	.007
Within Groups	219.682	127	1.730		
Total	237.392	129			

Table 8: ANOVA[c]

Gender

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3595.958	5	719.192	1.268	.277
Within Groups	192247.503	339	567.102		
Total	195843.461	344			

An analysis of Tables 6 and 7 indicates that the F-value is greater than the "Sig" value (4. 838> 0.008, 5.119>0.007) and the latter is less than 0.05. Thus, indicating that significant difference exist in medicine and food consumption across the age groups.This could be attributed to the fact that older and married household heads were more likely to spend more on food and medicine than younger and single individuals. More so, the income level of families may be a significant determinant of the differences in spending across the age groups. Moreover, Table 8 indicates that there are no significant differences in the increase in spending across gender since the "Sig" value is less than 0.05 ($p<0.277$). This indicates that the increase in consumption expenditure levels for both male and females have been more or less the same as a result of the pandemic.

Conclusion and Recommendations

The study was carried out to examine the impact of a pandemic outbreak on consumer behaviour in Nigeria. The extant literature in consumer demand has considered consumer consumption as a vital component of aggregate demand and an ingredient in economic growth and development of any nation. Nevertheless, for this to happen, the behaviour of the consumer must be such that further the growth of demand for goods and services.

Based on the analysis, the following findings are made:

1. Nigerians are aware of the outbreak of COVID-19 in the country and most of them are very concerned about its impact on their lifestyle and welfare. The major areas of concern expressed by people are on health, personal finance, economy, education and security.

2. There are significant changes in the pattern of consumer spending since the outbreak of the pandemic. Daily consumption habits of people have been impacted. Moreover, e-payment rather cash is predominantly used by people while physical transactions are preferred to e-commerce.

3. The outbreak of COVID-19 has caused an increase in consumer spending for food, medicine gasoline and sanitizers beyond previous levels.

4. There are significant differences in the rise in spending amongst age groups for food and medicine. However, overall analysis of the expenditure across gender indicates that the differences are not significant. Hence, there is a similar change in expenditure levels for gender.

In general, the study observed that there is a high level of awareness and concern of the citizenry on the outbreak of COVID-19 in the country. Also, there is a change in consumer behaviour and shifts in the spending patterns of most households due to the pandemic with increased usage of medical products and services, food purchases and cashless transactions.

Policy Recommendations

Based on the findings, the following recommendations are proffered:

1. There is the need for the government and major stakeholders to sustain all efforts geared towards generating awareness of the serious implications of the pandemic on health of individuals. This could heighten concern of individuals on the implications of the virus and increase adherence to social distance measures advocated by the government.
2. The government should use its monetary policy measures to deepen interest in e-commerce and e-pay methods and open up the space for more investment in the financial technology sector. In addition, efforts should be made to improve the nations' poor digital infrastructure and expand its reach especially to people in the rural areas. Furthermore, social investment projects and cash transfer to poor people should be employed by the government to sustain the momentum in demand for consumption goods occasioned by the pandemic.
3. It is equally important that the government in recognition of the rise in demand for health products and services by citizens in this period should

utilize the opportunity to increase investment in the health sector of the country. This could be done through sustained 15% budgetary allocation to the health sector as advocated by World Health Organisation. Moreover, ease of access to food by households should be encouraged to reduce hardship that may occur as a result of scarcity and inflation.

4. Lastly, government monetary policy measures should favour imposition of lesser burdens on households through reduction of interest rates and subsidizing credit to small businesses. Furthermore, cash transfers that target poor households and social investment project should be encouraged to sustain consumption of activities and keep businesses afloat in the economy.

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SCALING NEW HEIGHTS: SEARCHING FOR THE IMPACTS OF THE CONTRIBUTIONS OF R&D AND SERVICE SECTOR EMPLOYMENT ON THE NIGERIAN ECONOMY

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Abstract

In spite of the contributions of various components of the Nigerian economy; its real gross domestic products (RGDP) have not reasonably scaled new heights in terms of monetary outputs. The study therefore seeks to empirically establish how the contributions of Research and Development (R&D), and service sector employment have impacted on the Nigerian economy from 1990 to 2019. Methodologically, we source data from the statistical bulletin of Central Bank of Nigeria and adopt econometric method with restrictive emphasis on ARDL cointegrating approach as data analytical method. The findings reveal that the contribution of research and development (CORD) scales new height by impacting significantly on RGDP in the long run; while service sector employment (SVSE) does not. By implication, it means that continuous spending on R&D spurs innovative outcomes that equip human capital to make better contributions to RGDP. We conclude that the contribution of R&D provides the enablement for the growth of the Nigerian economy, and *remains the oil that lubricates the processes of economic progress of Nigeria. Hence, scaling up spending in R&D is recommended – as it presents an opportunity for Nigeria to move from resource-base to knowledge-based economy, and serves as a midwife for Nigerian economic rebirth.*

Keywords: R&D, Service Sector, Employment, Nigeria, RGDP, ARDL
JEL Classification: CO1, E24, H52, I2, J21, O32

Introduction

Quality of workforce is a contributory reason why some nations are rich, others poor; although, it was erroneously suspected, in the past, to be the quality and amount of physical capital. Nonetheless, in recent years, it has been discovered that some nations, industries, and firms do exhibit high level of workforce output even with low levels of physical capital (Shenglang,

2018); even more, from stockpile of outcomes from research and development (Peters & Taylor, 2015). This stresses the point why modern economies are quickly drifting from resource-based to knowledge-based; for the reason that, knowledge-based economy is the fundamental determinant of value creation that contributes to the development of a nation. By imitating this, evolving economies preoccupy themselves with formulation of policies that encourage increase in investment in R&D; and enforce proper deployment and utilization of the contribution of R&D for economic growth and development (Luisa & Ji, 2013).

Given the importance of human capital, any that is government desirous of economic growth and development invests heavily in R&D. It is for this reason that government makes tripartite investments in human capital – covering expenditures on education, health and R&D; with a primary objective to equip workforce for the production of goods and services. The last aspect of such investment centres more on knowledge creation and that forms the focus of this paper. By thinking in that direction, Surani, Gendron and Maredia (2017) argue that to increase economic growth and productivity through knowledge creation, countries often invest in R&D, and makes concerted dedication to science and technology. Kalu (2001) giving support to such an assertion posits that knowledge creation is needed to improve productivity and development by raising quality of the labour force and that of the population in general, and in this way the outlays yield a continuing return in future. No wonder, developed economies are transforming their production configuration into more knowledge-based; thus making the contributions of R&D more visible for economic competitiveness (World Bank, 2006). In advanced economies, the comparative utilization of R&D's contributions, like new production techniques, product design, market power, and intangibles incorporated in workforce and organization structure is rising continuously (Chun & Nadiri, 2016). As such R&D represents an important and growing component of total stock, as well as a critical determinant of firms' output and economic advancement (Gourio & Rudanko, 2014; Clausen & Hirth, 2016).

The Organization for Economic Co-operation and Development (OECD, 2011) reports that increasing expenditure on R&D by governments and other private establishments in the United States, Japan, and other parts of Europe,

has made tremendous impacts on output and, remains a major driver of economic growth. For example, it made a critical contribution of over 18% to real gross domestic products in OECD countries in 2017 (OECD, 2019). Being attracted by the contributions of R&D, Nigeria is making effort towards investing more in R&D. A case in point is the recent approval of ₦7.5b for research by the Tertiary Education Trust Fund (TETFund) – an agency of the Nigerian Federal Ministry of Education. Additionally, according to the statistics from the World Bank, (2019), Nigerian government has spent over N300b in R&D. In view of this development, it is naturally expected that R&D (through creative, inventive and innovative enterprises) would have equipped people to engage in more productive employment – so as to be able to contribute to the growth of the economy; as it has made in other countries; especially, in the OECDs. For instance, the contribution of R&D to RGDP from 2017 to 2019 increased approximately to 176% from 3.6%; similarly, service sector employment's contribution increased from 0.1% to 20%. In spite of these contributions, the Nigerian real GDP has not performed as expected. A thought provoking point is the fact that from 2018 to 2019, it increased from 9.39% - not in corresponding volumes with the contributions of R&D and service sector employment.

This unpleasant scenario seriously questions most theoretical and empirical works whose argument is that R&D is a very important contributor to economic growth (Guellec & Van Pottelsberghe, 2001; Greg, & Agboro, 2014; Gamayuni, 2015; Clausen, & Hirth, 2016); and investment in human capital instigates growth through innovation (Luisa, James, & Ji, 2013; Okoye, Offor, & Manukaji, 2019). By attempting to provide some empirical insight to this issue, Jaiyeoba (2015), Adeyemi and Ogunsola (2016), and Ehigiator (2017) who delved into assessing the impact of intangible assets on firms, service sectors and Nigerian economy have reported that intangible assets is significant to the growth of the Nigerian economy. Nonetheless, these studies made a disturbing presumption of assuming R&D into intangible assets, exclusion service sector employment and used data that ended in 2015. Noting this gap, out study departs from that stand point by decomposing and extracting the contribution of R&D from intangible assets, so as to enable us effectively determine its impact, as a single variable, on RGDP; also includes service sector employment being the transmitter of the contributions of R&D,

and extending the data point to 2019. This to the best of our knowledge has not received specific research attention as documented in the extant literature.

Arising from this paucity in literature, our study fills the gap by addressing this question: have the contributions of R&D and service sector employment scaled new heights by impacting significantly on the Nigerian economy? Responding to this question using autoregressive distributive lag (ARDL) cointegration approach forms the thesis of this study. In addition to the introduction in section one, the rest of the paper is organized in the sequence of; literature reviews – theoretical and empirical reviews - done in section two, section three considers methods of study, results and discussion presented in section four, and section five focuses on concluding remarks.

Literature Review

The growth of any economy is a function of a number of things, including the contributions from R&D and service sector employment. Economic literature has widely documented that increase in spending in R&D brings about enhanced growth. As it is the anticipation of the spending entity to receive some returns in form of new ideas to improve on existing products and produce new ones, initiate new ways of reducing costs, mitigating negative externalities, satisfying customers, sustaining and increasing market share, increasing sales; be more productive, profitable and competitive, and enjoy increasing return to and external economics of scale. Following this argument, this section of the paper dwells on conceptual clarification, theoretical review, empirical review, and summary of the literature reviewed.

Conceptual Clarification

The concept of R&D is bore out of making scientifically detailed and careful investigation into some subject or area of study with the aim of discovering and applying new knowledge, facts, skills or information that would move a country from a less desirable stage to a more desirable stage. In order to achieve this, R&D becomes an integral part of government's investment in human capital development – which is done in three folds; expenditure in education, health and R&D. Luisa, James & Ji (2013) define R&D as the effort made by public and private sectors to; brew new ideas, develop and

produce intermediate goods, discover methods to reduce costs and maximize output that would allow firms to be more productive and profitable. Also, they report that Romer conceptualizes R&D as any investment in human capital that contributes its spillovers to greater aggregate output of a nation. In the same study, it is reported that Griliches defines R&D as the effort made towards stocking knowledge for productive purposes.

Guellec and Van-Pottelsberghe (2001) see R&D as an investment effort made towards finding ways to improve on existing techniques and develop new ideas that will interplay seamlessly with productivity growth. Aghion and Howitt (2007) posit that R&D is a trusted and sure means of knowledge development that is non-rivalry, and enables a nation advance the course of economic growth by introducing better way of production operations. Thus, if technological progress is the key driving force for economic progress; then such progress should come from R&D which produces industrial innovations, creativity and inventions (Grossman & Helpman documented in Luisa, James & Ji, 2013). The review done so far clarifies and expounds the concept of R&D, and presents a balance synthesis that R&D is an enterprise that makes economies and firms breakeven through its sustaining contributions.

Employment is the avenue through which the benefits, otherwise contributions of R&D, are transmitted in an economy – whose anatomy captures service sector as a major component. In the scenario of economic nexus, a functional service sector depends on inputs from different outlets, including R&D. No wonder, Ghani and O'Connell (2014) see it as a sector that has the capacity to become an important driver of sustained growth in Africa if properly fed with the right kind of workforce. The service sector of any economy is that segment of an economy saddles with the responsibility of producing services, otherwise known as intangible goods. According to CBN classification of the Nigerian economy, the service sector is made up of those economic units that engage in the production of services in the country. They include the transport, information and communication, utilities, accommodation and food service, finance and insurance, real estate, professional, scientific and technical service, public administration, education, human health and social service, arts, entertainment and recreation, and other service units. It is one of the five main sectors of the Nigerian economy.

Service sector is that part of the Nigerian economy that provides complementary consumption; generate auxiliary outputs as inputs for the other sectors; and generally create more employment than any other sectors producing tangible goods (Oyejide & Bankole, 2001). The United Nations Conference on Trade and Development (UNCTAD, 2015) defines the service sector as an economic part responsible for contributing to growth and development of the other sectors in any country. The OECD (2008) says that the service sector employment is the engagement of employees in the provision of services that make tremendous contributions in order to keep an economy in a stable and healthy state. It is the act of employing or the state of being employed in the business of providing goods that are intangible in nature. Providing such services in a reasonable quantity is a matter of the quality of the employed workforce – whose capacity is built through the externalities or spillovers from the contributions of R&D.

Economic growth is loosely defined as the steady increase in the overall quantity of goods and services produced in a country. Such increase comes from the contributions of critical sectors of the economy – which mainly include the agricultural, industrial, construction, trade and service sectors. Simply put, an economy grows when there is significant increase in the quantity of goods and services produced by these sectors on a yearly basis. For Jhingan (2007), economic growth is the quantitative steady increase in a country's per capita or individual productivity or output or income that is brought about by the enlargement of its workforce, capital, consumption and the volume of trade. Chappelow (2019) sees economic growth as an improved production of economic goods and services in comparison from a period of time to another. It has two measurement points – nominal and real (adjusted for inflation), and could be construed as the aggregation of all national outputs produced by the factors of production within a country in a given year. It is a rise in the manufacturing of goods and services within a specific time frame (Kimberly, 2019), and it is ascribed as the stock-pile of physical and human capital as well as the expansion in the creation and production of new goods emerging from technological innovation, inventions and creativity provide by R&D. Therefore, if expenditure and commitment in R&D are raised, there will be increase in creative, inventive and innovative trajectories leading to opening of the economy through creation of job opportunities, and

acceleration of economic progress of a nation. This is framework upon which this study conceptualizes a possible nexus from the contributions of R&D, service sector employment and economic growth in Nigeria.

Theoretical Review

Our study relies on pure theory of public expenditure, and human capital theory. The pure theory of public expenditure was expounded in the 1950s by Samuelson. For Samuelson, according to Greg and Agboro (2014), public expenditure is made to achieve growth in labour; with a target to increase spending on education and allied enterprises. The theory preaches for growth in capital (K) and technological innovation through the activities of R&D; and, argues that government expenditure grows an economy through economic activities. In the context of our study, when government increases expenditure on R&D, both labour and capital, as factors of production, would be enhanced through creativity, inventions, and innovations. Hence, it is inferred that through such expenditure, new technologies are developed and improvement is made on the existing one(s) for effective and efficient production.

The second theory (human capital theory) argues that investment in human capital enables R&D produce a workforce that would improve on the output and productivity of labor. This is because such investment instills in a workforce, useful skills, knowledge and the right attitude that will raise the quality of the labour force and workers' expected future incomes by increasing their earnings for lifetime (Becker as cited in Mutamba 2016; and Kalu, 2001). The theory argues that a rise in the quality of workforce will result in tremendous economic growth. By implication, growth in the Nigerian RGDP requires a free release of the energy of workforce through qualitative outcome of R&D – which comes by through sincere government expenditure. Such expenditure should bring forth through R&D, a workforce that would serve as the key to the development of a people's ability to manage and induce change that will ultimately grow an economy by throwing up desired contributions. Intuitively, the theory offers a trajectory for a strong explanation and discourse around the connection between contributions of investment in education, and its attendant outcomes for economic growth.

The choice of the study variables is informed and inferred from the theoretical disposition demonstrated in the foregoing discourse – which clearly points to a positive relationship between investment in human capital and economic growth and development. With emphasis on expenditure on R&D, it is theoretically expected that, through the service sector employment, R&D should create the needed opportunities for the workforce to be fully equipped in the real sense creativity, inventions and innovations, and with useful knowledge and skills - so as to be able to make massive contributions for significant growth of the Nigerian economy. Arising from this therefore, the theoretical framework for our study is that investment in human capital through expenditure in R&D creates opportunities for a workforce to be well-equipped for employment, be more productive and makes contributions that would enable the Nigerian economy to scale new heights. Hence, the theoretical framework is symbolizes thus:
IHC→ERD→IWF→SSE→IPT→IRGDP.

Where: IHC - investment in human capital; ERD - expenditure in R&D; IWF – improved workforce; SSE – service sector employment; IPT – increase in productivity; IRGDP – increased RGDP.

Empirical Review

By looking at the nexus between R&D and economic growth, Adeyemi and Ogunsola (2016) investigate the impact of human capital development on economic growth in Nigeria, from 1990 to 2015, using ARDL approach. Their study reports a positive long-run relationship between government expenditure on R&D and economic growth. Marrano, Haskel and Wallis (2007) studying the United Kingdom using descriptive statistical methods, report that 15% of labour output growth is accounted for by intangible capital deepening in 1979-2005 and 20% in 1995-2003. Gamayuni (2015) examine the effect of intangible assets, financial performance and financial policies on the firm value of public companies in Indonesia, 2007–2009. By adopting OLS method, the study reports that returns from R&D have positive and significant effect on the firm value, while others failed in that test within the period of the study. Rahko (2014) looking at market value, R&D, patents, and organizational capital with Finnish evidence on 56,000 firms observations

between 1995 and 2008. Using Non Linear Square (NLS) regression method, the study reports that organizational capital, R&D, patents, and patent citations have positive and significant effects on market value.

Parcharidis and Varsakelis (2010) carry out research on R&D and emerging market: the case of the Athens Stock Exchange Greek firms, from 1996-2004 using OLS technique. They report that the Greek firms' R&D investment affects the market worth of the sampled firms. Hao, Manole and Van-Ark (2008) report that in Germany, France, Italy and Spain, from 1995 to 2003, intangible capital as an umbrella variable for intangible goods accounts for 31% of labour productivity growth in Germany, 37% in France, 59% in Italy and 64% in Spain. Subsequently, growth rose by 10% in Germany, 14% in France, 37% in Italy and 40% in Spain. Studying a sample of the 16 OECD member countries, Guellec and Van Pottelsberghe (2001) report positive and significant coefficient for business and public R&D expenditure but a slightly larger effect of foreign R&D on multifactor productivity growth. Griffith, Redding and Van-Reenen (2004) report a two-fold effect of R&D on total factor productivity – first, the direct effect of R&D on total factor productivity and secondly, the potential of R&D to enhance the capacity of a country to absorb new technologies.

Looking at service sector employment (henceforth referred to as SSE) and economic growth (afterward called EG), Ekesiobi, Dimnwobi, Ifebi and Ibekilo (2016) studies the relationship between SSE and manufacturing output growth in Nigeria from 1986 to 2014 with cointigration approach. The study details that SSE has a positive but insignificant effect on manufacturing output growth in Nigeria. By lending support to this report, Ramakrishna (2010) comparing the contributions of SSE, agricultural and industrial outputs to EG in India using data spanning from 1980 to 2016 with regression technique of OLS, reports that SSE in India contributes more to EG than agricultural and industrial sectors. By doing a sectoral analysis on the contributions of SSE, manufacturing and agricultural outputs to EG in Kenya, Barungi, Ogunleye & Zamba (2015) report that SSE contributes about 57%, while manufacturing and agriculture, respectively contribute about 9% and 21% to the nation's gross domestic product; and SSE share to GDP moves positively with EG. The submission by Francois and Hoekman (2010) in a panel data analysis of SSE

performance and productivity growth in sub-Saharan Africa countries from 1980 to 2005, submits that a positive relationship exists between the two; hence SSE is considered an essential driver of EG. Their conclusion earns support from the study of Park and Papadopoulou (2012) who report that service sector is a key provider of jobs that lead to economic growth in that region.

Summary of Literature Reviewed

There is a glaring consensus in the definitions of R&D – as an enterprise that makes significant contributions to the growth of an economy through its critical components such as creativity, inventions and innovations. Also, SSE is equally unanimously conceptualized as the act of engagement of workforce for the production of services that lead to economic growth. Distinctively, our study construes EG as steady increase in the production of goods and service occasioned by the contributions of R&D and SSE. On the theoretical review, it is evident that existing studies utilize a configuration of Romers' endogenous growth theory, Schumpeter theory of growth and human capital theory to look at issues bordering on the relationship between human capital development and EG. However, our study distances itself from the usual, by combining pure theory of public expenditure and human capital theory in the examination of the impact of the contributions of R&D and SSE on the Nigerian economy. Lastly, it is evident that the empirical studies reviewed report mixed results on the relationship between R&D, SSE and EG – suggesting that the debate surrounding this subject matter is inconclusive. On the account of this, we are motivated to re-examine the situation by empirically searching how the Nigerian RGDP has scaled new heights through the contributions of R&D and SSE from 1990 to 2019 using ARDL approach to cointegration as method for data analysis.

Method of Study

Data, Sources and Model Specification

Our study adopts a blueprint of ex-post facto research design and sources secondary data from the statistical bulletin of Central Bank of Nigeria and World Bank. The specification and estimation of the equation follows an implicit assumption and theoretical prescription that R&D and SSE contribute

to the growth the Nigerian economy. This is lucidly captured in the following functional relationship as modeled below:

$RGDP = f(CORD, SVSE)$ 1

Where: RGDP = Real Gross Domestic Product, a proxy for economic growth, CORD = Contribution of R&D, and SVSE = Service Sector Employment.

From equation 1, we proceed to estimate Autoregressive Distributed Lag (ARDL) bound cointegration equation as follows:

$$\Delta In(RGDP')_1 = \beta_0 + \beta_1 In(RGDP)_{t-1} + \beta_2 ln(CORD)_{t-1} + \beta_3 In(SVSE)_{t-1} + \sum_{i=1}^{p} \theta_{1i} \Delta(RGDP)_{t-i} + \sum_{i=1}^{r} \theta_{2i} \Delta(CORD)_{t-0} + \sum_{i=1}^{s} \theta_{3i} \Delta(SVSE)_{t-0} + \mu_t \quad 2$$

$$\Delta In(CORD')_1 = \beta_0 + \beta_1 In(CORD)_{t-1} + \beta_2 ln(RGDP)_{t-1} + \beta_3 In(SVSE)_{t-1} + \sum_{i=1}^{p} \theta_{1i} \Delta(CORD)_{t-i} + \sum_{i=1}^{r} \theta_{2i} \Delta(RGDP)_{t-0} + \sum_{i=1}^{s} \theta_{3i} \Delta(SVSE)_{t-0} + \mu_t \quad 3$$

$$\Delta In(SVSE')_1 = \beta_0 + \beta_1 In(SVSE)_{t-1} + \beta_2 ln(RGDP)_{t-1} + \beta_3 In(CORD)_{t-1} + \sum_{i=1}^{p} \theta_{1i} \Delta(SVSE)_{t-i} + \sum_{i=1}^{r} \theta_{2i} \Delta(RGDP)_{t-0} + \sum_{i=1}^{s} \theta_{3i} \Delta(CORD)_{t-0} + \mu_t \quad 4$$

Where: *β_0 is the slope of the ARDL regression line; $\beta_1 - \beta_3$; $\theta_1 - \theta_3$ are coefficients of parameters to be estimated; Δ = denotes the first difference operator; $RGDP'_{t-1}$, $CORD'_{t-1}$, $SVSE'_{t-1}$ are vectors of the equations allowed to be purely 1(0), 1(I) or cointegraeted; p, r, and s are maximum lags associated with the exogenous variables; ln = natural log; t – I = the lagged values; μ_t = vector of the uncorrelated random error term with zero mean and constant variance.*

The cointegrating *vectorized* equations are formally r*eparameterize* into error correction mechanism (ECM) equations as specified below:

$$\Delta(LNRGDP)_t = \Psi 0 + \sum_{i=1}^{p} \Psi 1i \Delta(LNRGDP)_{t-I} + \sum_{i=0}^{r} \Psi 2i \Delta(LNCORD)_{t-i} + \sum_{i=0}^{s} \Psi 3i \Delta(LNSVSE)_{t-I} + \text{þ}1ECT_{t-1} + e_t \quad 5$$

$$\Delta(LNCORD)_t = \Psi 0 + \sum_{i=1}^{p} \Psi 1i \Delta(LNCORD)_{t-I} + \sum_{i=0}^{r} \Psi 2i \Delta(LNRGDP)_{t-i} + \sum_{i=0}^{s} \Psi 3i \Delta(LNSVSE)_{t-I} + \text{þ}1ECT_{t-1} + e_t \quad 6$$

$$\Delta(LNSVSE)_t = \Psi 0 + \sum_{i=1}^{p} \Psi 1i \Delta(LNSVSE)_{t-I} + \sum_{i=0}^{r} \Psi 2i \Delta(LNRGDP)_{t-i} + \sum_{i=0}^{s} \Psi 3i \Delta(LNCORD)_{t-I} + \text{þ}1ECT_{t-1} + e_t \quad 7$$

Where: *All other parameters retain their earlier definitions, while ECT is the error correction term – which defines the speed of adjustment in the coefficients of þ_1. It is used to capture the significant of the ECM. In other*

words, it explains how much of the disequilibrium in the short run periods that can be corrected in order to restore equilibrium in the model. t-1 = is the lagged length for the ECT, Ψ1i, Ψ2i and Ψ3i are the coefficients lagged values of exogenous variables, Δ = difference operator for short run equation, p is the lag length for the dependent variable, r and s are lag length for the independent variables, e_t *= stochastic term*

Data Analysis Techniques and Justification

As methods for data analysis, we make use of ARDL bound cointegration technique. The choice of this method is informed by a leading argument that when one cointegrating vector exists, Johansen and Juselius (1990) cointegration procedure cannot be applied; hence, it becomes imperative to explore Autoregressive Distributed Lag (ARDL) approach to cointegration or bound procedure for a long run relationship as proposed by Pesaran, Smith and Shin (2001) and Pesaran, *et. al.*, (1996b); irrespective of whether the underlying variables are I(0), I(1) or a combination of both (Nkoro & Uko, 2016). This justification is hinged on an implicit assumption that this approach gives realistic and efficient estimates, enables the identification of cointegrating *vectorised* equation(s), and provides the basis to *reparameterize* the equation(s) into error correction mechanism. Additionally, descriptive statistical, correlation matrix, Philip-Perron (PP) unit root, Granger causality and residual diagnostic techniques are as well used for efficient and robust analysis.

Results and Discussion

Table 1: Results of Descriptive Statistics and Correlational Matrix

Descriptive Statistics				**Correlation Matrix**			
	LNRGDP	**LNCORD**	**LNSVSE**		**LNRGDP**	**LNCORD**	**LNSVSE**
Mean	38479.63	63.39321	43.92107	LNRGDP	1	0.5676	0.8754
Maximum	69023.93	435.0400	51.83000	LNCORD	0.5676	1	0.5987
Minimum	19199.06	0.160000	37.74000	LNSVSE	0.8754	0.5987	1
Std. Dev.	18342.63	91.75565	5.102426				
Skewness	0.492932	2.640922	0.281775				
Kurtosis	1.693350	10.87271	1.501767				
Jarque-Bera	3.125806	104.8571	2.989339				
Probability	0.209527	0.000000	0.224323				
Observations	28	28	28				

Source: *Computed by the Authors with E-Views, 2020.*

As presented in Table 1, the results of descriptive statistical tests show that LNRGDP, LNCORD, LNSVSE have mean values of 38479.63, 63.39321 and 43.92107; maximum values of 69023.93, 435.0400, and 51.83000; minimum values of 19199.06, 0.160000 and 37.74000; skewness values of 0.492932, 0.492932 and 0.281775. The values of kurtosis, Jarque-Bera and probability are 1.693350, 3.125806, and 0.209527 for LNRGDP; 10.87271, and 104.8571 and 0.000000 for LNCORD; and, 1.501767, 2.989339 and 0.224323 for LNSVSE respectively. The results of symmetry in the distribution show that the data are moderately skewed given the 0.5 and 1 threshold; have heavier tails (leptokurtic distribution), and normally distributed. The correlational matrix result reveals that LNCORD and LNRGDP are 0.5676 (57%) correlated, but LNSVSE and LNRGDP are 0.8754 (88%) correlated. This result shows that both contributions of research and development (CORD) and service sector employment (SVSE) are positively and strongly related with RGDP; but it is instructive to mention that SVSE is more correlated with RGDP.

Table 2: Philip-Perron (PP) Unit Root Stationary Test

Variables	PP Stat. at Levels	1% Crit. Value	5% Crit. Value	PP Stat. at first Diff.	1% Crit. Value	5% Crit. Value	Order of Integration
In(RGDP)	-1.444991	-3.679322	-2.967767	-5.193606*	-3.689194	-2.971853	I(1)
In(CORD)	-1.058034	-3.679322	-2.967767	-10.54423*	-3.689194	-2.971853	I(1)
In(SVSE)	-5.957958*	-3.679322	-2.967767	-10.54423	-3.689194	-2.971853	I(0)

*Note: *(**) indicates (1%) and (5%) Significant Levels*
Source: *Computed by the Authors with E-Views, 20200.*

The PP unit root test result reveals that the variables area stationary and integrated of order one [I(1)]; except for SVSE, that attains *stationarity* status and becomes integrated of order zero [I(0)] at 1% and 5% levels. This satisfies the condition for the application of ARDL cointegrating technique – which requires the underlying variables to be stationary at I(0), I(1) or a combination of both, but NOT integrated of order two [I(2)].

Table 3: Result of ARDL Bound Test

Equations (Dependent Variables)	Statistical Values		Critical Value Bounds at 5%		Decision on Cointegration	Decision on Next Action
	F-values	t-values	I(0)/Lower Bound	I(1) /Upper Bound		
LNRGDP	0.901164	-0.711762	3.79	4.85	No, accept Ho	Do nothing!
LNCORD	7.774111	-3.886173	3.79	4.85	Yes, reject Ho	Estimate ECM
LNSVSE	0.436623	- 0.714651	3.79	4.85	No, accept Ho	Do nothing!

Note: *ARDL =Autoregressive Distributive Lag; SROLS = Short Run Ordinary Least Squares. Ho = Null Hypothesis. ECM = Error Correction Model*
Source: *An Extract from ARDL Bound Test Result Computed by the Authors with E-Views, 2020.*

Basically, this study addresses the question of whether or not the contributions of R&D and service sector employment have impacted on the Nigerian economy by conducting autoregressive distributive lag (ARDL) test. From Table 3, it is evident that the result of the test from LNRGDP and LNSVSE equations has F-values of 0.901164 and 0.436623 respectively. These values are less than both the lower and upper bounds. As a confirmation, the absolute value of t-stat (0.711762) is less than both the values of "I(0)" bounds "I(1)" bounds. However, the result of LNCORD equation reveals that F-stat (7.774111) is greater than "I(0)" bounds and "I(1)" bounds implying that the underlying variable has a single long run relationship equation; thus suggesting the identification of a cointegrating vector ($\Delta(LNCORD)_t$). It is noteworthy to point out that this result satisfies the condition for the application of ARDL cointegrating approach and gives us the confidence to *reparameterize* the LNCORD equation into error correction mechanism as reported in the table below.

Table 4: Results of *Reparameterized* Error Correction Mechanism Test for LNCORD Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.333795	34.07219	-0.156544	0.8778
D(LNCORD(-1))	1.024651	0.636881	1.608857	0.1300
D(LNCORD(-2))	0.197486	0.359575	0.549222	0.5915
D(LNCORD(-3))	0.207760	0.245183	0.847367	0.4110
D(LNRGDP(-1))	-0.004535	0.002182	-2.078115	0.0566
D(LNRGDP(-2))	0.014199	0.020094	0.706616	0.4914
D(LNRGDP(-3))	0.001289	0.023976	0.053763	0.9579
D(LNSVSE(-1))	-9.178862	38.82289	-0.236429	0.8165
D(LNSVSE(-2))	-25.34714	33.75829	-0.750842	0.4652
D(LNSVSE(-3))	-0.488769	31.31566	-0.015608	0.9878
ECM(-1)	1.804988	0.756596	-2.385670	0.0317
R-squared	0.575328			

Note: *Lag Length Structure: 3; Lag Order Selection Criterion: LR = Sequential modified LR test statistic (each test at 5% level); FPE = Final Prediction Error; AIC = Akaike Information Criterion; and HQ = Hannan-Quinn Information Criterion indicate 3; while SC = Schwarz Information Criterion indicates 1, as the lag order selection criteria. We based the lag length at 3 given that majority of the selection criteria are within that region.*
Source: *An Extract from ECM Result Output Computed by the Authors with E-Views, 2020.*

As a response to the request made in Table 4, ECM is analyzed using 3 as the lag length structure, which was selected by LR, FPE, AIC, and HQ as lag order selection criteria. The result reveals that the coefficients of lags of CORD appear with positive sign – indicating that the contributions of R&D make positive impact on RGDP, but not significant as shown in the probability values, in the previous last three years from the end date of this study. Within the maximum lag length period of 3, RGDP appears with a negative sign in the first lag, but maintains positive sign in the lag periods of 2 and 3, though without being significant at any lag period. The service sector employment (LNSVSE) equation shows that within the first, second and third lag periods, SVSE appears with a negative sign and remains not significant as reveal by the probability values. The result of the coefficient of the ECM(-1) (1.804988) is positively signed showing that instead of divergent relationship, there is

evidence of a convergence between the contributions of R&D and RGDP. This is also found to be significant at the prob. value of 0.0317, and tells us that there is long-run relationship between the variables as well as implicit existence of Granger –causality; hence pairwise Granger causality test is conducted and reported below:

Table 5: Results of Estimated ARDL Pairwise Granger Causality Test

Null Hypothesis:	**Obs.**	**F-Statistic**	**Prob.**	**Decision**	**Nature of Causality**
LNCORD does not Granger Cause LNRGDP	28	0.55232	0.5831	Accept Ho	Unidirectional, from RGDP to CORD
LNRGDP does not Granger Cause LNCORD		4.75699	0.0187	Reject Ho	
LNSVSE does not Granger Cause LNRGDP	28	0.55430	0.5820	Accept Ho	Zero Directional, from both RGDP and SVSE
LNRGDP does not Granger Cause LNSVSE		1.01086	0.3795	Accept Ho	

Source: *An Extract from ARDL Granger Result Output Computed by the Authors.*

It is revealed that there is a unidirectional Granger causality from RGDP to CORD, because of the significant status of the result; but none is found from CORD to RGDP. Zero directional causality is found between SVSE and RGDP – because their respective probability values are greater than 5% level, howbeit. The result implies that CORD cannot Granger cause RGDP within the period of the study, but RGDP can Granger cause CORD. Simply put, CORD could not be used to forecast RGDP, but RGPD could be used to make forecast on CORD. It is also reported in the table that neither SVSE nor RGDP could Granger cause each other; thus, a zero directional causality is found between both variables. This is not surprising because the ARDL bound test could not establish a long run relationship between SVSE and RGDP as evidenced in Table 3.

Table 6: Results of Residual Diagnostic Tests

Equation (Dependent Variables)	Historgram Normality Result at 5% (0.05)			Serial Correlation Result at 5% (0.05)		Heteroscedasticity Result at 5% (0.05)	
	Prob. Value	Jarque-Bera Value	Decision	F.Stat Value	Decision	F.Stat Value	Decision
LNRDGP	0.0000	227.6694	ND	1.415979	NSC	1.587659	Reject Ho
LNCORD	0.9007	0.209163	ND	0.985385	NSC	3.256256	Reject Ho
LNSVSE	0.8976	0.216102	ND	4.359716	NCS	2.561816	Reject Ho

Note: *ND = Normally Distributed; NSC means Not Serially Correlated*
Source: *An Extract from ARDL Residual Diagnostic Tests Computed by the Authors.*

For the purpose of testing for the robustness of our results, residual diagnostic tests are conducted. In the three equations (LNRGDP, LNCORD, and LNSVSE) it is evident that the values of Jarque-Bera are greater than 5% level – which suggests that the errors in the data used for the analysis are normally distributed. To this end, we have a good reason to infer that the error or residuals in the distribution cannot affect the result of our study because of their wide variance. To be convincingly sure, we proceed to conduct serial correlation test at 5% level, using Breusch-Godfrey technique. The result of the test calls for retention of the null hypothesis, which states that there is no serial autocorrelation in the distribution. This is on the account that the F-stat values are greater than 5% level of significance. This result, once again gives us the reason to conclude that the data used for the analysis vise-a-vise the subject matter are reliable; hence the result that ensued from the analysis have somewhat policy relevant implications. For the avoidance of doubt, we proceed to use Breusch-Pagan-Godfrey technique to conduct heteroscedasticity residual diagnostic test. The results show that all the values of F-statistics are greater than 5% level of significance; therefore the models are said to be homoskedastic.

Policy Implication

Using ARDL cointegrating approach we examine the impact of the contributions of R&D and service sector employment on the Nigerian economy. The result of that ensued from the analysis reveal that the contribution of R&D makes significant positive impact on the Nigerian economy within the period of this study. This provides the enabling reason that led to *reparameterization* of the LNCORD equation into error correction mechanism. The result of the ECM test appears with a positive sign and also significant – indicating that there is a convergent relationship which can be best described as a directional relationship between the contribution of R&D and real gross domestic products. In other words, there is a behavioural assumption that both variables exhibit an equilibrium relationship both in short-run and long-run, because the deviation from long-run equilibrium could be corrected gradually through a series of partial short-run adjustments at 180.4988%. Simply put, the result unravels the fact that it would take approximately 180.5% speed of adjustment to correct the errors found in short run of the model. This high percentage speed of adjustment is supported by high maximum lag length of 3, which explains the length of time it would take economic actions from the contributions of R&D to significantly impact on RGDP, by smoothening out rough economic cycle, respond to and address appropriately, the issues that retard RGDP; all things being constant.

It could be discerned from the foregoing results that continuous investment in human capital with emphasis on expenditure on R&D, enables a nation to stockpile knowledge and skills, and brews new ideas that contributes to scaling up aggregate output. No wonder, Aghion and Howitt (2007) say that R&D is a trusted and sure means of knowledge development that is non-rivalry, and enables a nation advance the course of economic growth by introducing better way of production operations. The Granger causality result is a pointer to this claim. In line with this result, Olalekan (2014) reports that a positive relationship exists between human capital and economic growth in Nigeria; a long run relationship existed between education and economic growth in Nigeria (Oladeji, 2015). Still in support of our results, Coe and Helpman (1995) make a submission that a country's real gross domestic product depends on domestic and foreign R&D capital stocks.

Our result also finds a place of honour in the proposition of pure theory of public expenditure which argues that investment in education leads to the production of human capital through increase in employment of skilled labour; as a major component in the growth process. This is why the contribution of R&D is phenomenal to the underlying performance of the Nigerian economy, because they possess the quality of moving closer together over time. This happens because, theoretically, a well-equipped workforce makes possible, the convergence of the outcome of human capital and economic growth. A take-home therein is that education as the driver of technological progress and producer of the right impetus for economic progress of a nation cannot be argued less. This informs an assertion from Grossman and Helpman cited in Luisa, James & Ji (2013) that technological progress drives economic growth through R&D through industrial innovations, creativity and inventions (Grossman & Helpman cited in Luisa, James & Ji, 2013).

Unfortunately, our study could not establish a long run relationship between service sector employment and real gross domestic product in Nigeria as reported in Table 3. This means that the service sector employment has no capacity of improving the growth performance in Nigeria. This captures our surprise in the sense that the unprecedented high rate of unemployment that characterizes the Nigerian employment space most likely could be responsible for this. Further, it suggests that, even when the human capital is well formed, developed and equipped with right knowledge and skills, it does not find a place in the production space to utilize such endowment. This goes to support our claim that a zero directional relationship exists between service sector employment and real gross domestic products.

This result does not beat our expectation though, because in reality, the level of employment in the Nigerian service sector is obviously not sufficient to make significant impact on RGDP. Perhaps, such deficiency could be excused on the account that service sector is not part of the real sector of the Nigerian economy, and lacks the required capacities to employ as much as the agricultural, industrial and trade sectors do. The result could also be attributed to the nature of the Nigerian service sector – whose orientation is geared towards production of intangible goods that may have indirect impact on RGDP; just as we have in the education, health, transport, real estate, and utility sub-sectors. In support of our study, Okoye, Offor and Manukaji (2019)

report that service sector employees were found not to make significant impact on the performance of quoted companies in Nigeria.

Contrary to our result, Barungi, Ogunleye and Zamba (2015) report a dramatic growth in the service sector of Kenya. Their study say that the sector contributes about 57%, while manufacturing and agriculture, respectively contribute about 9% and 21% to the nation's gross domestic product. Similarly, Francois and Hoekman (2010) submit that service sector performance impacts on productivity growth and could be regarded as a key driver of economic development in sub-Saharan African countries. Based on a survey of Asian region economies, Park and Papadopoulou (2012) report that service sector is a key provider of jobs that lead to economic growth in that region. Lashmi and Kumar (2012) put forward an argument that the sector as compared to the primary and secondary sectors is regarded as the main driver of economic growth in both developed and developing countries in the 1990s and 2000s. It is obvious that the direction of impact of service sector on the Nigerian economy remains an inconclusive debate that would warrant further studies using different methods of study, data set, sample size and other control variables. This is said because the source of the inconclusiveness could be the; area of study, type and nature of data, study period or control variable, or combination of all.

Concluding Remarks

Investments in knowledge creation, through expenditure in research and development, plays key roles ranging from formation of human capital stock, production of skillful manpower, creation of opportunities (employment generation) to earn reasonable income, increase in aggregate demand, increase in national income, to ultimately, increase in economic growth and development. This value chain benefits from R&D motivated the search for the impact of the contributions of R&D and service sector employment on the Nigerian economy from 1990 to 2019. To justify this motivation, we employ ARDL cointegration approach as analytical technique. The results of analysis reveal among others that; the contributions of R&D scale new height by significantly impacting on RGDP in the long run; while the service sector employment to do same.

This finding is in line with a remarkable consensus that R&D drives productivity at the national level. Therefore, we conclude that for Nigeria economy to grow there is need to continuously harness the contributions of R&D because it gives the enablement for an economy to move from resource-based to knowledge-based. By implications, it means that the Nigerian economy grows more similar with the contribution of R&D over and across the years. Also, the development of knowledge-based economy through spending in research and development is a key that unlocks the economic progress of a nation. This position wraps up our argument that the contribution of R&D and its attendant outcome is the fulcrum that shoulders the competitiveness and progress that support sustainable economic growth and development of any nation. Following the conclusion, we recommend; firstly, that the Nigerian government should continue to step up its spending on research and development; budgetary attention to education should be scaled up to the international acceptable percentage of 26; and lastly, employment attention should be given to the service sector in public and private space.

Unlike other studies, this study makes a contribution to knowledge by using assessing the performance of the Nigerian economy through the use of novel Nigerian data on the contribution of R&D, rather than assuming it to be intangible asset, and moderating its hebaviour with service sector employment as a means of transmitting the contribution of R&D to the larger economy. It also documents the impacts of R&D and service sector employment on the Nigerian economy using more recent data outlays covering a period of 40 years.

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FOREIGN DIRECT INVESTMENTS AND ECONOMIC DEVELOPMENT IN NIGERIA

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Abstract

This study examined the impact of foreign direct investments on economic development in Nigeria using annual time series data from 1980-2018. The dataset were filtered using Augmented Dickey Fuller unit root test and thereafter a cointegration test was carried out. These tests suggested the method of error correction mechanism, which was used to estimate the dynamic short run model. The result shows that foreign direct investments impacted positively on economic development but with fairly low impact. Moreso, official development assistance domestic capital formation could be good sources of economic development. Based on these findings, the study therefore recommends that; the government should put up new investors friendly policies/measures that will attract foreign direct investments into the country and also, the existing policies/measures that are not investors' friendly should be strengthened or repeal.

Keywords: Economic Development, Foreign Direct Investments, Error Correction Mechanism, Nigeria.

Introduction

Unemployment in Nigeria is currently a huge challenge. Between 1960 and 2018, the number of educational institutions had multiplied in so much that annually, myriads of school graduates are churned out into the labour market in Nigeria. This is further fuelled by a high rate of urban growth (Otto 2008). These school graduates are largely trained for modern industries. However the rates of growth in these firms and industries have been minimal; the industrial sector contributes only about four percent (4%) of gross domestic product(gdp) and about 90 million Nigerians are living under two United States dollar ($2) per day, with the possibility of six people falling into this extreme poverty category every minute (Nigerian Pop. Stat. 2020).

It is to enhance economic growth and development through wider productive opportunities that foreign direct investments (FDI) are highly sought for. In

theory, foreign direct investments can expand opportunities for employment by directly absorbing some of these school turn outs. Foreign direct investment could also increase indirect employment through distributional value chain, through demand related activities. Apart from employment FDI may introduce new technologies, lifestyles and cultures, increase local outputs, among others, leading to economic development in the local economy where they operate. Foreign direct investment therefore may be seen as harbingers of economic development. In fact the success story of countries such as Singapore, Hong Kong and china, among others exemplify the benefits of foreign direct investments. Between 1970 and 1999 China received the highest number of foreign direct investments among developing countries, followed by Brazil and Argentina (Otto and Ukpere, 2014).

It is for these reasons that governments in Nigeria have made efforts to encourage FDI through different policies. For instance, The Rivers State government has promised free land, ease of repatriation of profits among others to foreign direct investors investing in the State. The Federal government has also improved the ease of doing business in Nigeria, to encourage foreign direct investors in Nigeria, among other policy reforms (Economic and Recovery Growth Plan 2017-2020).

The Challenge

Several studies confirm that among sub-Saharan African countries, Nigeria has been a choice destination for FDI (UNCTAD 2020, World Bank, 2020). FDI inflows to Nigeria in 2019 amounted to USD 3.3 billion in 2019 (UNCTAD, 2020). This was 48.5% decrease compared to the figure achieved in 2018. Total value of FDI in Nigeria was estimated at USD 98.6 billion in 2019. Nigeria is the third highest host off FDI's in Africa after Egypt and Ethiopia. FDI is attracted to Nigeria because of its hydrocarbon deposits, its population size and the size of its gross domestic product (GDP) among other reasons. For instance, it's Ease of doing business improved a little and the country ranked 131 out of 190 countries in the ease of doing business ranking in 2018 (World Bank, 2020).

The major sub-sectors that attract FDI include the energy, housing and hydrocarbons among others. The major investing countries in recent times

include China, United States, United Kingdom, France, Netherlands and Italy among others. However, according to the United Nations Conference on Trade and Development – UNCTAD (2020), in spite of the inflow into Nigeria, high rates of unemployment, poverty, insecurity and inequality continue to plague the Nigerian economy, leading to frustration among citizens and motivating some people to take the risk of migrating to foreign countries through dangerous routes such as the Mediterranean Sea and the Sahara desert. Does this mean that foreign direct investments as a source of economic development have failed in Nigeria? It is to resolve this puzzle that this study examined the impact of foreign direct investments on economic development in Nigeria over a 20-year period, (1990-2018). Moreover it is trite to posit that there are studies that show that some FDIs could operate as extensions of neo-colonialism and impact on their host economies negatively (Obikeze and Umuodo, 2019).

Literature Review

Conceptual and Theoretical Issues

Economic development has to do with a rise in human welfare. The concept has been defined in several ways over time; such definitions include development as growth, inclusive-growth, welfare, capacity, transformation or modernization among others. Essentially the focus of economic development is the greatest good to the greatest number in an economy (Bentham, 1907). For clarity, some of these views are discussed to drive home the meaning of development.

In the immediate post Second World War era, economic development was seen as synonymous with economic growth and defined as the expansion in the size of the economy, which may be indexed with rising gross national income or the gross domestic product. Thus Harrod and Domar (1957), mathematically defined economic growth (g) as the rate of change in the size of national income divided by the original (base year) national income as follows:

$$g=\frac{Dy}{y} \qquad 1$$

The point in this theory was that a growing economy could enhance the welfare of its citizens. For example if an economy of 100 people could produce N100 million worth of goods within a given period say a year, each person could consume one million worth of goods on-average. If that same economy, in the next year generates 200 million worth of goods, welfare would increase to 2 million per capita. This analysis assumes away the facts of offsetting factors such as increase in population, unequal distribution of income and inflation among others. The definition is tailored to output growth and the gross domestic product may be used as proxy. The gross domestic product is also important when the efficacy of policies to the local economy is to be assessed because unlike the gross national product, the GDP is measured by the output of a local economy.

It was in recognition of the above that the United Nations declared the 1960s, the development decade and encouraged materially poor economies to grow at rates of 5-7 per cent or more annually (Todaro and Smith, 2007). This trajectory was achieved and exceeded in some economies in the 1960s, especially in Latin America but instead of a general rise in human welfare or the greatest good for the greatest number which development should be; economic growth was associated with high levels of inequality, unemployment, poverty and high levels of illiteracy among others. In point, the experience proved that economic growth may be necessary to define development but it was not a sufficient condition for the definition. The new ethos became growth with equity.

In 1969, the then president of the World Institute for Development Economics Research (WIDER), as part of his presidential speech to the 11th Conference, posited that;

> The questions asked about a country's development should be what has been happening to poverty, employment and inequality. If all of those three have been declining from high levels in addition to economic growth, then beyond doubt there has been a period of development for the country concerned. If two or more of these central problems have been growing worse especially if all three have, it would be strange to call the results development, even if per capita income doubled. (Seer, 1969).

In other words, economic growth must impact on the wider society and lead to greater good to more people. Seer (1969.3) therefore defines economic development as a 'multi-dimensional concepts involving improvement in human well-being'. Ekpo (2015) has increased the basic expectations required to define development by adding portable water, education, health and energy to the basic list outlined in Seer.

For enhanced economic growth and even for distributional efficiencies to occur, there is need for enhanced capacity: capacity to produce, capacity to manage social, biological and physical environment, capacity to manage resources among others. Part of the Nigerian problem is the low domestic capacity to manage resources, power and opportunities at different levels. There is always a tendency among many to abuse opportunities entrusted to them.

It is in Nexus that Nnoli (1981) defines development as a dialectical phenomenon in which man and society interacts with their physical, biological and inter-human environments transforming them to better humanity at large and being transformed in the process. This definition would include the capacity to harness nature to solve human challenges. For example using natural resources to produce cell phones, aeroplanes, drones and produce medicines for the benefits of Man. A higher ability to do this defines the level of development. This is what Ake (1981) refers to as ability to create and recreate.

Development has also been seen as modernization or structural transformation of economic activities from primary production to secondary or tertiary economic activities. Typically, underdeveloped economies are unable to produce secondary goods efficiently. They then are trapped as producers of raw materials, unprocessed natural goods and timely suffer immersing growth when there is glut in the market. This is a current challenge in Nigeria where the country has been an oil bearing economy for decades without an ability to process crude oil into desired products. Lewis (1954), Chennery among other scholars believe that a developed economy is one that has shifted production from primary to secondary or tertiary and modernised.

In this paper however, the focus is increased output which can be measured by the gross domestic product. However because the focus is welfare changes, the real gross domestic product has been adapted since it is net of inflation through the discounting process. The GDP is sufficient because it may be assumed that the productive capacity can be measured by output. Therefore the real gross domestic product (RGDP) is sufficient to index development. More so, the issues of population figures in Nigeria are more of estimates than facts on ground and often suffer trust deficits.

Foreign direct investments may be defined as a cross border business activity where an investor is directly in control of the business activities in both home and host economies; the essence is often to enhance the private interests of the owners. FDI may also be seen as an extension or spill over of investments from a home country to a host country. Foreign direct investment is a cross-border private investment which is made with a view to obtaining long-lasting interest and control of the investments (OECD, 2013). The organisation for economic cooperation and development (OECD, 2013) states that the investor controls at least 10 per cent of the voting power of the firm overseas. Foreign direct investments may also be designed as overseas investments by private multinational corporations (Todaro and Smith, 2007). In other words, FDI are multinational investments as stated in Otto and Ukpere (2014), it is necessary to identify the conceptual relationship between foreign direct investments and multinational corporations. It is known that a multinational or transnational Enterprise is a firm that engages in foreign direct investments in more than one country (see Otto and Ukpere, 2014). Thus, Otto and Ukpere (2014) define FDI as an international business activity in which the investors have direct control over their operations and capital resources. This definition may suffice for this discourse. Examples of foreign direct investment in Nigeria include Michelin, Dunlop, Patterson Zochonics (PZ), Exxon Mobil Unlimited among others, FDI may be vertical, horizontal or conglomerate, Brownfield or Greenfield: it is vertical when the essence is to promote value-chain, for example introduce intermediate goods for the home country. It is horizontal when it is an expansion of same business at home.

Adeneye, Otto & Cookey (2014) stated that, FDI involves the setting up of new factories by foreign nationals in countries other than their home countries. Economist usually argue in favour of FDI due to the high multiplier impacts

on the local economy, such as improved employment, income, consumption, new technology, markets and so on which these investors introduce. FDI may also be referred to as investment equity flow into an economy, which includes equity capital, new investments earnings and other capital. There are several theories of foreign direct investment. They include:

(I) Theory of Industrial Organization
(II) Internalization Theory
(III) Oligopolistic Theory
(IV) Eclectic Theory
(V) Kojima Theory
(VI) Currency Area Theory
(VII) Product Cycle Theory

A brief elucidation of some of these theories may enhance clarity of this paper.

The Theory of Industrial Organisation is associated with Hymner (1968) who posited that business organisations operating in foreign countries encounter competition with indigenous firms in their host economies that have such advantages as culture, language, consumer preference among others. However, the foreign direct investor is often better equipped with capital and technical capabilities. These capabilities make the FDI products differentiated, and give it the competitive edge over local firms. These advantages are further enhanced through market imperfections (Nayyar, 2014).

The Internalization Theory was popularized Buckley and Casson (2009) which focuses on the role of intermediate inputs or technology in the formation of FDI's. Firms to gain competitive advantages, tend to internalize intermediate products in the form of vertical integration. This may be observed as;

I) Bilateral monopolies
II) Resource coordination
III) Product price estimation challenges by consumers
IV) Efficient exploitation of market power

The Oligopolistic Theory was introduced by Knickerbocker (1973). The theory assumes that FDI'S arise from the fact of oligopolies in the real world. Firms therefore spread investments into economics which have factor

abundance, markets, potentials which can enhance its fortunes and limits competition from rival firms.

The Eclectic Paradigm was postulated by Dunning (1977). It is an attempt to integrate the internalization, oligopolistic and location theories. It is often referred to as the OLI (ownership, location and internalization) paradigm (Adeneye, Otto and Cookey, 2014). This theory explains the motivation of foreign direct investments with ownership advantages, locational advantages and internalization economies. This broad group of consideration defined the direction of investors. Using the above Theory, Otto and Ukpere (2014) listed four types of FDI's as follows;

(I) Resource seekers
(II) Market seekers
(III) Efficiency seekers
(IV) Strategic asset or capability seekers

Product Life Cycle Theory is associated with Vernon (1977). The theory associates FDI into two different stages in the growth of a firm. At the start, production and sales are done in the home economy. As production grows and matures, the firm seeks market opportunities elsewhere leading to FDI, after identifying a foreign outlet. This extension could start with exports and later when the conditions become right establish a direct production outlet in the host to optimize its economies.

The Kojima theory was postulated in 1975, it identified two key motives driving the outward bound FDI in Japan, and these are the desire to exploit natural resources in host countries and the need to take advantage of low-wage labour. The theory categorised FDI's into trade-oriented and anti-trade oriented. The theory noted that Japanese FDI's a trade oriented and claimed that American FDI's are anti trade-oriented because they tend to generate negative spill-over effects on trade.

The Currency Area Theory is yet another Theory of FDI. This theory popularized by Aliber (1971) believes that FDI's flow from countries with stronger exchange rates to countries with weaker exchange rate. Since exchange rates often mirror the strength of an economy. An interpretation

could be that stronger economies tend to invest in countries with openings for investments.

These theories and more tend to explain the flow of foreign direct investments. It is important to state that FDI flows out and in to specific countries. For instance, there are several FDI firms from Nigeria flowing to other countries such as Ghana, Sierra Leone, South Africa and the United Kingdom. These are FDI's outflows, while FDI's from other countries also come to Nigeria to invest. So there are outflows and inflows of FDI. FDI's flows from developed economies to other developed economies. FDIs also flow from developed economies to developing economies and vice versa.

As stated earlier the eclectic paradigm is sufficient to serve as the theoretical basis for this paper

Empirical Literature

There are several empirical studies done on the impact of foreign direct investments on economic development and growth, Otto and Ukpere (2014), examined the impact of foreign direct investments on economic development and growth in Nigeria between 1970 and 2010, the study observed that within that period, there was a positive relationship between FDI and economic development and growth in Nigeria. The study used gross domestic product as proxy for economic growth while foreign direct investments and exchange rate where the explanatory variables.

Adeneye, Otto and Cookey (2014) also examined the effects of FDI on economic growth in Nigeria between 1980 to 2012, the study observed that foreign direct investments inflow into Nigeria did not sufficiently impact on economic growth in Nigeria. The study used the gross domestic product as proxy for economic growth while foreign direct investment, exchange rate and interest rate were the explanatory variables. Yagub, Adam and Ayodele (2013) investigated the impact of FDI on economic growth in Nigeria. The study adopted the Vector Auto-Regressive (VAR) model to identify the structure of inter-relationships among the variables. This study results showed that FDI does not granger cause economic growth. Similarly, Olusenya (2013) investigated the impact of FDI on economic growth in Nigeria before and after the structural adjustment programme. The study did a granger causality test.

The study covered 1970-2010 but the study was disaggregated into three periods: 1970-1986, 1986-2010 and 1970-2010. The results of the causality test showed that between 1970-1968, economic growth did not granger cause FDI. The study also showed that between 1986- 2010 there was no such causality. For the entire duration the data showed that GDP influences the flow of FDI at least between 1970 and 2010.

In point, the empirical literature does no show a uniform effect of foreign direct investments on the economy; some studies show that FDI impacts positively on the economy while other studies show that the effect is negative. This study attempts to empirically determine the situation. Hence, this study attempts to investigate the impact of foreign capital investments on development in Nigeria. Also, this study builds on Otto and Ukpere (2014), by examining the situation between 1980 and 2018 to confirm if the new data and results align with the earlier work.

Methodology

Data and Source

The annual data for this study were obtained from the Central Bank of Nigeria Statistical Bulletins. The data covers the period 1980-2018. The variables used in model specification are real gross domestic product which was used as a measure of economic development while foreign direct investments, domestic capital formation and Official Development Assistance served as the explanatory variables.

Model Specification

As earlier stated, this study is modelled after Otto and Ukpere (2014) but with some modifications. For instance Otto & Ukpere (2014) used foreign direct investments and exchange rate as explanatory variables but in this study, the explanatory variables have been modified to include domestic capital formation and Official Development Assistance. Hence, the study assumes therefore that economic development is a function of Foreign Direct Investments, Official Development Assistance and Domestic Capital Formation.

$$RGDP = f(FDI, ODA, DCF) \quad 2$$

Where;
RGDP= Real Gross Domestic Product
FDI = Foreign Direct Investments
ODA= Official Development Assistance
DCF=Domestic Capital Formation

From equation 2 an explicit estimable function is specified after transforming the equation into natural log in order to reduce variability. The stochastic form of the model is as follows:

$$RGDP = \phi_0 + \phi_1 FDI + \phi_1 ODA + \phi_3 DCF + \mu_t \quad 3$$

μ_t is the stochastic element.

The apriori expectation of the equation estimates are as follows: $\phi_1 > 0$, $\phi_2 > 0$, $\phi_3 > 0$. This shows that foreign direct investments, official development assistance and domestic capital formation variables are positively related to economic development.

Method of Data Analysis

Studies have shown that time series exhibit trends and therefore the convergence of the series are not always achieved. The implication of working non-stationary series is a nonsense regression result (Nkoro and Otto, 2018). The possible way out of this is to first examine the features of the series in order to ascertain their stationarity and long run relationship. This determines the econometric technique to apply. Given the above, the unit root test was conducted using the Augmented Dickey Fuller (ADF), the ADF unit root test is to ascertain the stationarity of the variables. The Johansen cointegration test was also carried out to ascertain the existence of the long run relationship of the variables and, this is followed by the error correction mechanism (ECM) used for the adjustment of any short run disequilibrium to the long run equilibrium of the variables.

Results and Discussion

Unit Root Test

The univariate time series properties were examined using the Augmented Dickey Fuller (ADF).

Table 1: Unit Root Test Result

Variables	Level	1st Diff	Order of Integration
RGDP	-2.9339	-5.1468*	I(1)
FDI	-2.3634	-3.5930*	I(1)
ODA	-1.0078	-4.1944*	I(1)
DCF	-1.1753	-6.0643*	I(1)

Note: *1 percent and **5 percent level of significance.
Source: Author's Computation from Eview 9.

The unit root test result in Table 1 shows that the ADF test fails to reject the null hypothesis of the presence of unit root for all the variables. However, all the series were integrated of order one [I(1)]. This means that all the series were stationary at first difference. This now led to the test for the long run relationship between the variables using Johansen and Juselius cointegration test.

Cointegration Test

The Johansen cointegration test in Table 2 shows that there is one cointegrating equation, suggesting that real gross domestic product and foreign direct investments official development assistance and domestic capital formation are cointegrated.

Table 2: Johansen Cointegration Test Result 0f the logRGDP, logFDI, logODA logDCF

Hypothesized No. of CE(s)	Eigenvalue	Likelihood Ratio	5 Percent Critical Value
None**	0.4583	44.8470	34.91
At most 1**	0.3057	29.0974	19.96
At most 2	0.0858	3.7705	9.24

*(**) denotes rejection of the Hypothesis at 5%(1%) significance level
L.R. test indicates two cointegrating equation(s) at 5% significance level
Source: Author's Computation from Eview 9.

Given that the variables are integrated of the same order, I(1) and long run relationship established, the error correction model(ECM) was estimated and used for analysis.

The Parsimonious Error Correction Model

Table 3: Error Correction Result

Variable	Coefficient	T-statistics	Probability
C	-4.2943	4.6924	0.0011
ΔlogRGDP(-1)	0.4281	-3.4785	0.0345
ΔlogFDI	0.3317	-3.4898	0.0011
ΔlogFDI(-1)	0.0045	0.0391	0.2788
ΔlogODA	-0.4345	-2.0776	0.0472
ΔlogDCF	0.0213	13.2752	0.0000
ECM(-1)	-0.1861	-2.5948	0.0251
R^2 = 0.69, Adjusted R^2 = 0.68, F- stat = 163.13, Durbin Watson = 1.84			

Source: Author's Computation from Eview 9.

Table 3 reveals that the positive and significant of one year lag of Real Gross Domestic Product (RGDP) (economic development) could further influence economic development. This is economically plausible if there is an improvement in welfare, this could assist to further enhance welfare of the economy. Current and one year lag of Foreign Direct Investments (FDI) conform to the apriori expectation but only the current FDI is statistically significant at 5 percent level, though with fairly low magnitude despite the huge FDI inflow. This could be attributed to insecurity, infrastructural deficit and high cost of production. These factors among others have constraint the positive effect of FDI in Nigeria.

On the other hand, the Official Development Assistance (ODA) has negative and statistically significant relationship with RGDP, which implies that a percentage increase in ODA decreased the RGDP in Nigeria. Similarly, Domestic Capital Formation (DCF) has a positive and statistically significant relationship with RGDP, which implies that a percentage increase in DCF increased the RGDP in Nigeria. Furthermore, the error correction variable (ECM) is rightly signed and statistically significant. This shows that there is existence of short run disequilibrium and there is hope for long run

equilibrium. The coefficient of ECM (-1) shows that changes in RGDP respond to a deviation from the long run equilibrium. With the coefficient of -0.19, it means that about 19 percent of disequilibrium in the previous year is corrected in the current year.

On statistical ground, the adjusted R^2 is 0.68, meaning that 68 percent of the change in RGDP is attributed to the variables in the model while the remaining 32 percent is attributed to factors not captured in the model. The Durbin-Watson statistics is 1.8, meaning that there is a tolerable autocorrelation. This to an extent confirms the reliability of the model.

Conclusion and Recommendations

Foreign Direct Investments remain key to the economic development of any economy and therefore require adequate attention. The result of this paper shows that foreign direct investments exert positive significant effect on real gross domestic product (economic development) in Nigeria within the period under study.

Based on the finding, the following recommendations are made: The government should put up new investors friendly policies/measures that will attract foreign direct investments into the country and also, the existing policies/measures that are not investors' friendly should be strengthened or repeal.

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