

## **DEPOSIT MONEY BANK CREDITS AND EXPORT PERFORMANCE IN NIGERIA: AN EMPIRICAL ANALYSIS**

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### **Abstract**

*The growth of export sector has dwindled over time in spite of deposit money bank credit supply to the sector. It is against this backdrop that this study examines the impact of deposit money bank credit on the growth of export in Nigeria from 1986 to 2016. It employs the Auto Regressive Distributed Lag (ARDL) bounds testing approach to co-integration analysis to establish the long run relationship between the relevant time series data. The empirical findings showed that deposit money bank credit to export sector has an inverse but significant relationship on the Nigerian export sector while on the short run, deposit money bank credit at lag one and two have direct and significant impact on the Nigerian export sector. This implies that continuous supply of credit to export sector has the tendency to encourage growth of exportation of goods and services in the Nigerian economy. Furthermore, the findings from stability test conducted using the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of the residual shown that the ARDL model is stable. The study recommends that interest rates should be reduced to make loanable funds cheaper for investors in the export sector and monetary authority should put in place adequate policies toward deepening the financial sector to encourage supply and reduce the cost of credit to the export sector in the Nigerian economy.*

*Keywords: Export, Oil and Non Oil Export, Credit, Deposit Money Bank, Exporter, Economic Growth*

## INTRODUCTION

Historically, July 1986 mark the new paradigm shift of the Nigerian economy when the federal government articulated a Structural Adjustment Programme (SAP) with the aim of restructuring the country macroeconomic indicators that had been dwindling such as double digit inflation rate, adverse balance of payment, high unemployment rate, high poverty rate and low capacity utilization in the Nigerian manufacturing sector of the economy. Enoma and Iganiga (2011) noted that the programme of SAP brought a series of economic reforms such as the liberalization of the financial sector in terms of allocating and distributing of deposit money bank credit facility to various economic agents to enhance their input and productivity. Deposit money bank credit is defined as bank loans and advances provided by the deposit money bank of financial institutions to various sectors (agriculture, manufacturing, services and the export sector) in order to enhance their productivity which by implication leads to economic growth and development.

Arikpo and Adebisi (2017) and Nwanyanwu (2012) noted that the deposit money banking sector help to make credit available by mobilizing surplus funds from depositor who have no immediate needs of such money and channel it in form of credit to investors who have brilliant ideals on how to create additional wealth in the economy but lack the necessary capital to execute the ideals. Also Tahir, Shehzadi, Ali and Ullah (2015) asserted that the main function or role of deposit money banks and other financial institutions in economy is to mobilize surpluses from income holders as their savings to others who need it on interest. Thus the banks convert the savings into loanable funds. These loanable funds are channeled to investors who borrow to meet the financial needs of their businesses. The study further reveals that credits obtained by economic agents enable them meet operating expenses. For instance business firm obtained credit to buy machinery and equipment, farmers obtained credit to purchase farm input such as fertilizers, seeds, farm buildings and the government obtained credit to meet various kinds of government expenditure either recurrent or capital. Therefore, there is need for deposit money bank to extend credit facility to the Nigerian export sector in order to induce the sector performance and economic growth.

The export led growth hypothesis postulated that export is an engine for economic growth because increase in exportation of goods and services increase export earnings, enhance employment generation, create profit, trigger off greater productivity and lead to rise in accumulation of reserve that allow a country to maintain stable balance of payment. A prominent characteristic of Nigeria's external sector has remained basically the same since independent in 1960. The export sector is characterized by the dominance of a single export commodity. In the 1960s and 1970s the Nigerian economy was dominated by agricultural

commodity exports but from the mid-1970s crude oil became the main export product of the Nigerian economy. The export of crude oil now constitutes about 96% of total exports. The performance of the non-oil export sector in the past two decades leaves little or nothing to be desired. The policy concern over the years has therefore been to expand non-oil export in a bid to diversify the nation's export base (Okoh, 2004 & Imoughele & Ismali 2014).

Given the above scenario, the Nigerian government in bid to promote and encourage the export sector activities, has over the years implemented various financial policies and incentives to encourage the sector. According to Elechi, Kasie, and Chijindu (2016) these include Export Development Fund (EDF), Export Expansion Grant Funds Scheme (EEGF), Duty Draw-Back/Suspension and Manufacture in Bond Scheme, Export Adjustment Fund Scheme and Nigeria Export- Import Bank (NEXIM). Other institutional bodies put in place to engage in financing export trade in Nigeria such as Nigeria Export Promotion Council (NEPC), Nigeria Export Processing Free Zone Scheme (NEPFZS) and Nigeria Export Processing Zone Authority (NEPZA). Also there was the devaluation of exchange rate of the naira with a view to increasing export production and provision of credit facilities to the private sector involved in manufacturing of export items. Available information from Central Bank of Nigeria 2016 shows that total deposit money bank credit to the Nigerian export sector has been on the increase. As at 1986 total bank credits to the Nigeria export sector was N0.3 billion which increased to N0.7 billion in 1990 and it further increased to N19.4 Billion, N25.3 Billion, N26.4 Billion and N979.2 billion in 1995, 2000, 2005 and 2016 respectively. However, despite the increase in credits allocation to the export sector, the growth of the sector is not impressive. The sector recorded negative growth rate as at 1994, 1997, 1998, 2001, 2009, 2012, 2014, 2015 and 2016 with the -5.8%, -5.2%, -39.4%, -4.0%, -6.6%, -17.1%, -0.6%, -15.1%, -31.8% and -0.1% respectively (see appendix 1). Therefore it become imperative to ask what is the export performance of the Nigerian economy and what is the effect of deposit money bank credit on the Nigerian export sector.

With the above perception, this study examine the impact of deposit money bank credit on Nigeria exportation of goods and services from 1986 to 2016 in order to identify the policy that will revamp deposit money bank credit and the export sector performance in the country using Autoregressive Distributed Lag Model (ARDL) of Pesaran, Shin & Smith (2001). Pesaran, Shin and Smith (2001) approach have at least, two major advantages over the traditional approaches. The first advantage is that it is applicable irrespective of whether the underlying regressors are purely stationary, purely integrated or mutually co-integrated. Second, it has superior statistical properties in small sample. Ezzo (2005) and Enoma and Iganiga (2011) asserted that the bound test is relatively more efficient in small sample data size as in the case in most empirical studies on African countries, Nigeria inclusive. The rest of the paper is divided

into the following sections. Section 2 is the literature review. Section 3 is the research methods, section 4 is the discussion of empirical results while section 5 is the concluding remarks.

## LITERATURE REVIEW

### Conceptual Issues

The word bank is used in the sense of commercial bank or deposit money bank. Bank is a Germanic origin and some scholar trace it origin to the French word 'Banquil' and the Italian word 'Banca' which mean a bench for keeping, lending and exchange of money or coins in market place by money lender or money chargers. According to Jhingan (2006) the first bank was called the bank of Venice in Italy in the year 1157 and modern banking begin with the English Goldsmiths in the year 1840 and the first bank in Nigeria was African Banking Corporation and British West Africa now First Bank of Nigeria which was established in 1892 and the banking industry in Nigeria is regulated by the Central Bank of Nigeria. The apex bank started operation on July 1, 1959. Economist defines a bank as a financial institution whose main activities are accepting deposit from public, borrowing and lending money to various economic units. Jhingan (2013) defines a bank as an institution which accepts found from the public and in turns advance loans by creating credit. Bank loan are important source of finance for firms, consumers and government. The various type of Banks are deposit money bank, exchange bank, agricultural bank, cooperative banks, savings bank, microfinance bank and the central bank. The deposit money bank are those bank which perform all kinds of banking functions such as accepting deposit, advancing loan, credit creations and agency function. They also mobilized saving for capital formation, fiancé industry and the agricultural productivity, help in monetary policy implementation, enhance employment generation and finance trade both internal and external trade such as export of goods and services.

Export is the shipping of goods and services out from one country border to another country. The shipper of such goods and services is known as an "exporter" and is based in the country of export whereas the overseas based buyer is referred to as an "importer". Exports also refer to the selling of goods and services produced in the home country to other markets in another country (Mohan, 2005). The Nigeria export sector is classified into oil and non-oil exports sector. These are the sources of foreign exchange earnings to the country. Onodugo, Ikpe and Anowor (2013) noted that non-oil export sector comprises those groups of economic activities which are outside the petroleum and gas industry or those not directly linked to them while the oil export comprises those groups of economic activities which are link to the petroleum and gas industry. Accoeding to Okoh (2004) the non oil sector consists of sectors such as manufacturing, agriculture, telecommunication service, finance, tourism, real estate,

construction and health sectors and the non-oil (mostly agricultural) products such as groundnuts, palm kernel, palm oil, cocoa, rubber, cotton, coffee, beans, hides, skin and cattle dominated Nigeria's export trade in the 1960s. But the discovery of crude oil in commercial quantity shifted the attention from non-oil export to a "petroleum mono-cultural economy" since the 1970s. While petroleum export was growing, non-oil exports were declining. This made the dominance of oil export over non-oil export much more rapid and pervasive.

Deposit money bank credits are necessary tools for economic growth and development. This is based on the fact that when banks credit facilities are accessible to the productive sector – manufacturing, services and agriculture sectors, it results to enhancement of productivity which by implication leads to development. Despite the credit guidelines of the Central Bank of Nigeria (CBN) which is aimed at channeling funds to the productive sector in order to stimulate the growth, the real sectors performances has not been encouraging considering the volume of credits supplied (Akinleye, Akanni & Oladoja 2003). The debacle in dwindling in real sectors output to a large extent account for the poor high level of unemployment, a continuous increase in import demand, inability to make investments in modern machineries, low human capacity building. This continuous increase in import demand of manufacturing products led to deficits in the current account balance and low growth of the Nigerian economy (Nwosa & Oseni, 2013).

## **THEORETICAL LITERATURE**

There are three major theories underlying the role of deposit money banks in mobilizing credit for the real sector financing. They include the supply leading theory, financial repression theory and loanable Fund theory. The study will however hinge on loanable Fund theory.

### **The Supply Led Finance Theory**

This theory was first developed by Patrick (1966) as reported in Arikpo and Adebisi (2017) who stressed that finance is one of the leading aspects of economic development. Supply led finance theory is growth inducing or growth induced, which means finance (credit) is the most significant factor for promoting economic development such as export. The provision of funds through financial institutions to support the creation, transformation, expansion of industries and developmental projects is an element of the supply led theory.

### **Financial Repression Theory**

This is associated with the work of Mckinnon (1973) and Shaw (1973). The theory emphasizes that financial development would contribute most significantly to the growth of economic activities if the authorities were not to interfere in the operations of the financial institutions.

According to the proponents of the theory, poor performance by banks and other financial institutions is thus often attributed to interest rate regulation, ceiling on deposit and loan rates and official guidelines pertaining to lending operations. Such interferences results in a low and often negative rate of return on financial assets and therefore inefficient savings mobilized and channeled into investment projects. Arikpo and Adebisi (2017) observed that this theorists advocated a positive real interest rate and financial liberalization which would ensure an optimal financial structure for development as well as eliminating the fragmentation of market.

### **The loanable fund theory**

The neo classical loanable fund theory of interest rate propounded by Dennis Robertson, postulated that savings and investment are responsible for determination of interest rate in the long run. The rate of interest is the price that equates the demand for and supply of loanable funds (Jhingan 2006). The demand for loanable fund for investments in the export sector such as purchase of capital goods, constructions, shipment of goods and services, e.t.c. depends on the expected rate of profit as compared with the rate of interest. This demand is met by past savings or through dis-saving and are interest elastic. According to Ojima and Fabian, (2015) the loanable fund regards the rate of interest as a function of four variables: savings, investment, the desire to hoard and the money supply. The theory holds the proposition based on the general equilibrium theory of interest rate determined by the demand for and supply of loan and advances. The demand for capital stems from investment decision on the real sector such as export while the supply of capital results from savings in the country deposit money bank.

### **EMPIRICAL LITERATURE**

However, the answer to the question about the impact of deposit money bank credits on economic activity has remained inconclusive argument in the literature. Were, Nzomoi and Rutto (2012) examined the impact of access to bank credit on the economic performance using sectoral panel data for Kenya. They find that a positive and significant impact of credit on sectoral gross domestic product measured as real value added and recommended that the banking sector, which is the main source of credit to the private sector, is an important channel of financial intermediation through which financial resources can be mobilized for productive investment needed for the realization of the high economic growth. Consequently, policies towards deepening of the financial sector and reducing the cost of credit which is currently considered to be high are important. Avinash and Mitchell-Ryan (2009) assessed the impact of the sectoral distribution of deposit money bank credit on economic growth and development in

Trinidad and Tobago. They noted that in Trinidad and Tobago, commercial bank credit plays an important role in the way in which businesses and individuals finance economic transactions. They employ a vector error correction model to firstly assess the relationship between credit and investment, and secondly to determine the casual directionality of the relationship (if any). The model found that overall, credit and growth tends to demonstrate a demand following' relationship. However, further analysis revealed a 'supply leading' relationship between credit and growth within key sectors of the nonoil economy.

In Nigeria, Imoughele and Ismaila (2013) investigated the impact of deposit money bank credit accessibility and sectoral output performance in the Nigerian economy for the period which spanned between 1986 and 2010. An augmented growth model was estimated via the Ordinary Least Square (OLS) techniques to ascertain the relationship between various commercial bank credits and sectoral output growth. The variables were tested for stationarity and co-integration analysis was also carried out using the Augmented Dickey-Fuller test. Also error correction test was performed. The study found that the various commercial bank credit supply and other included variables has a long run relationship with sectoral output performance i.e agricultural, manufacturing and services sector output and the main demand for credit facility in the Nigerian economy is the manufacturing sector. The study also reveal that commercial bank credit has direct and insignificant impact on sectoral output performance but cumulative supply and demand for credit in the previous period has direct and significant impact on the growth of agriculture, manufacturing and the services sectors output. This findings was attributed to the vital position of credit facility as an input in the production process and persistent inflow to the manufacturing, Agriculture and services sectors have the capacity to induce the growth and development of the sectors which also induce exportation of goods and services. The study concluded that continuous credit accessibility in a deregulated financial market economy has the capacity to induce the nation sectoral output performance which will promote economic performance.

Yakubu and Affoi (2014) analyzed the impact of the commercial banks credit on economic growth in Nigeria from 1992 to 2012. In order to examine the role of commercial bank credit to the economy, the commercial bank credit to the private sector of the economy is used to estimate its impact on Nigeria's economic growth, which is proxy by gross domestic product. Using the ordinary least square it was found that the commercial bank credit has significant effect on economic growth in Nigerian. They recommended that better and stronger credit culture should be promoted and sustained; there should be strong and comprehensive legal framework that will continue to aid in monitoring the performance of credit to private sector and recovery debts owed to banks; bank should share among themselves information on bad debt;

and preferred sectors like agriculture and manufacturing should be favoured in terms of granting loans.

On the effect of deposit money bank credit on export, Gupta and Keshari (2013) evaluate export trade financing in India with particular reference to commercial banks in terms of providing financial resources for promoting exports by providing both pre and post shipment finances. Using the Ordinary least Square, the study finding shows that increasing in the flow of bank credit to export sector, restructuring the interest rates enhances export performance and calls for the need for coordination between banks and financial institutions in the country in financing export sector. However, much attention has not been given to impact of deposit money bank credit on Nigeria aggregate export performance. Most scholar focus attention on how it affect non oil export for instance, Ningi (2013) noted that non oil export contributes 4% to the Nigerian economy and the growth of Nigerian export sector is very low as a result of insufficient access to deposit money bank finance. Using questionnaires which was distributed to 120 non-oil exporting firms. Mean and standard deviation, multiple regression methodology was used for data analysis. The multiple regression indicates that non-oil exports financing by banks significantly accounts for slightly 16% of variance in non-oil exports performance, similarly beta coefficient reveals that firm' perception of banks attitude to risk of financing non-oil exports has the highest beta value followed by cost of bank finance, in the case of exchange rate fluctuation effects and volume and access to credit facility they present insignificant relationships with the non-oil exports and concluded that there is need for governments to develop financial sectors of their economies for improved exportation of goods and services.

Elechi, Kasie and Chijindu (2016) examine the contribution of the Nigerian banks to the promotion of non-oil exports. The study employs econometric time series analysis to examine the contribution of Nigerian deposit money banks credit to non-oil exports performance. Using unit root, co-integration and granger causality test, in which changes in non-oil exports performance was regressed against commercial banks credit to non-oil exports, interest rate and inflation using annual series data for the period 1990-2013. The result of the analysis showed that Nigerian banks have not adequately contributed toward the promotion of non-oil exports. The study also finds that there is a long run relationship between deposit money banks credit to non-oil exports and the performance of non-oil exports but no causality between Nigerian banks credit to non-oil exports. They recommended that the Central Bank of Nigeria should reduce the current monetary policy rate of 14% to a range of 5%-8% so that when commercial banks add up processing, transaction and other administrative fees, credit would be extended to non-oil exporters at a rate lower than 15%. Also the Central Bank of Nigeria should as an operational guideline, impose commercial banks to set aside a certain amount of money



from their yearly profit for financing of non-oil export as it is the case for small and medium scale enterprises equity scheme.

Iyoboyi and Abdelrasaq (2015) examined the impact of policy and institutions on non-oil exports in Nigeria for the period 1961-2012. The Autoregressive Distributed Lag (ARDL) framework was employed for analysis and found a long-run relationship between non-oil exports and the associated variables. In both the long and short run, broad money supply and exchange rate were found to have direct and significant impact on non-oil exports. Both the short and long run results indicate that fiscal deficit, interest rate, and openness are inversely related to non-oil exports and statistically significant with the exception of fiscal deficit and concluded that increased in money supply and proper exchange rate management are means of driving non-oil exports and also there is need to reduce fiscal deficit and interest rate. A reduced fiscal deficit can ease the pressure on the market for loanable fund and consequently the crowding out of private investment. Enoma and Isedu (2011) observes that the Nigerian economy has been a mono-product economy relying more on oil export and this has had an adverse effect on non-oil export supply. Equally observed are the various financial sector reforms embarked upon by the Central Bank of Nigeria (CBN) in boosting the productive capacity of the economy. Given these facts, they empirically examined the impact of current financial sector reforms on non-oil export in Nigeria and estimated non-oil export supply model. The results obtained from the estimated error correction model reveals that interest rate, exchange rate and broad money supply have direct and significant impact on non-oil export in Nigeria and recommended that financial sector reforms should be improved upon and sustained by the monetary authorities to induce exportation.

Arikpo and Adebisi (2017) examined the effects of deposit money banks financing on real sector output in Nigeria. The study specifically assessed the effect of private sector credit, interest rate spread, deposit mobilization and banks' holding of treasury bills on trade and agricultural sectors outputs in Nigeria. The study used the Vector Error Correction Mechanism (VECM) for data analysis and revealed that deposit money banks financing have a long term significant effect on the trade sector but does not have any long run effect on the agricultural sector in Nigeria and interest rate spread has an inverse effect on the trade sector output but a positive effect on the agricultural sector output. The study therefore recommended that the spread between lending and deposit rates should be narrowed to trigger savings and enhance banks' loan supply and real sector loan demand which consequently will boost productivity in the real sector.

### **Performance and Financial Deepening in the Nigerian Export Sector (1986-2016)**

The Nigeria export sector played significant roles in the Nigerian economy and is the primary source of capital for the country's economic development. For instance the average contribution of export sector to Nigeria's Gross Domestic Product from 1986 to 2016 was 22.50%. The highest contribution of the sector to GDP was recorded in 2005 with 32.5% while the least contribution was 4.4% in 1986. The growth rate of the Nigeria export sector has not been very encouraging. The highest growth rate was recorded in 1986 during the SAP period with growth rate of 240.3%. In fact negative growth rate was experienced in 1994, 1997, 1998, 2001, 2002, 2009, 2012, 2014, 2015 and 2016 which was -5.8%, 5.2%, -39.4%, -4%, -6.6%, -17.1%, 0.6%, 15.1%, 32.8%, and 0.1% respectively and the average of total export of Nigeria to other country between 1986 to 2016 was 4833.29 billion naira while the average of the oil export and the non oil export was 4575.39 billion naira and 254.41 billion naira respectively. The export sector consists of oil export and non oil export sectors. Of these two sub-sectors of the export sector, the oil sub-sector has been playing the dominant role. As can see in appendix 1, there was no year between 1986 and 2016 in which its share in the export sector was less than 90%. The average share of oil and non oil export to total export from 1986 to 2016 was 95.77% and 4.27% respectively. In fact, the share of oil sector was generally above 92 percent during the SAP period. However, the average growth rate of non oil export was 42.60% while the oil sector was 39.96%. The reason for this may not be farfetched is as a result of diversification policy put in place by government to diversify the export sector and make Nigeria a multi product economy.

An examination of appendix 2 gives a clearer picture of each of the average deposit money bank credit to the export sector in Nigeria from 1986 to 2016 was 115.35 billion naira. The highest value was recorded in 2015 with 1058.7 billion naira while the least demand was 0.3 billion naira in 1986. Furthermore, the share of export credit to total credit in Nigeria was 4.18%. This implies that there was inadequate supply of credit to the Nigeria export sector. The growth rate of deposit money bank credit to the export sector has not been very impressive even negative growth was recorded in 1997, 1999, 2002, 2004, 2005, 2009, 2010, 2011, 2013 and 2015. The average growth rate of the deposit money bank credit to the export from 1986 to 2013 was 33.79% but the growth rate increase up presidentially from 2014 to 2016. The financial deepening of the export sector is determined by the percentage share of the sector commercial bank credit to the total export sector output. The average financial deepening in the export sector is 2.12% per cent and the highest of 3.69% per cent was recorded in 1998 while the least share was 0.63% in 1992. This implies that there is insignificant demand and supply of credit to the Nigerian export sector.

## RESEARCH METHOD

### Theoretical Framework

The theoretical frame work of this study is based on the loanable fund theory. The loanable funds theory of interest was postulated by the Swedish economist Knut Wicksell in 1936. The loanable funds theory is a classical theory in which the rate of interest is determined by investment (demand for loans) and savings (the supply of loans) in an economy. The rate of interest is determined by equilibrium between the level of savings and the level of investment that is demand for credit by exporters and supply of credit by deposit money banks. This theory explained how the rate of interest is determined in a simple economy in which supply of money comes from bank savings and demand for money is for investment in the export sector. This theory is determined by the market forces of demand and supply of loan and advances to various economic sector.

### Model specification

The econometric model explored to capture the impact of deposit money bank credits and other variables on the export performance. The specification of this study takes a lead in the models developed by Elechi, Kasie and Chijindu (2016) in investigating the impact of deposit money bank credit on Nigeria non oil export. Their model is specified thus:

$$NEP = f(CBCNE, INTR, IFL) \text{-----} (1)$$

The model was represented in a log-linear econometric format as:

$$NEP = b_0 + b_1CBCNE + b_2INTR_t + b_3IFL_t + U_t \text{-----} (2)$$

NEP = Non-oil exports

CBCNE = Commercial banks credit to non-oil exports

IFL= inflation

INTR = Interest rate

$U_t$  = Error terms

Therefore, with slight modification of equation 2, the model for this study is specified as:

$$EXPP = f(CBX, EXR, INF, INT, OPE) \text{-----} (3)$$

Taking the natural log of both sides of equation 3 except interest rate, exchange rate, inflation rate and openness of the economy in order to determine the proportional relationship of export and macroeconomic indicators, we have

$$LOGEXPP = b_0 + b_1LOGCBX + b_2INF_t + b_3INT_t + b_4OPE_t + U_t \text{-----} (4)$$

$b_1 > 0$ ;  $b_4 > 0$ ;  $b_2 < 0$ ;  $b_3 < 0$

Where, CBX= Deposit Money Bank Credit

INT= Interest Rate

EXR= Exchange rate

INF= Inflation Rate

OPE= Openness of the Economy

U<sub>t</sub>= Error Term

Log = Logarithm

**Sources of Data**

This study relies on historical quantitative data, which are available in secondary form. The study employs annual time series data spanning from 1986 to 2016. The data are obtained from different sources, including various issues of the Central Bank of Nigeria Statistical Bulletins.

**Method of Data Analysis**

The study adopts the bounds testing cointegration procedure to estimate the long run and short run relationships and dynamic interaction among the variables of interest. Pesaran et. al (2001) proposed an Autoregressive Distributed Lag (ARDL) bounds. However, to ensure that the variables are not integrated of higher order like 1(2), it may be useful to test the unit root and the estimates the short and long run components of the model simultaneously, removing problems of omitted variables and autocorrection. The following ARDL model will be estimated in order to test the cointegration relationship between the variables: deposit money bank credit, exchange rate, inflation rate, Interest rate, openness of the economy and export. Thus,

$$\begin{aligned} \Delta LOG(EXPP)_t = & \alpha_0 + \sum_{i=1}^p \phi_i \Delta LOG(EXPP)_{t-i} + \sum_{i=0}^p \theta_i \Delta LOG(CBX)_{t-i} + \sum_{i=0}^p \lambda_i \Delta (EXR)_{t-i} + \sum_{i=0}^p \varphi_i \Delta (INF)_{t-i} \\ & + \sum_{i=0}^p \varphi_i \Delta (INT)_{t-i} + \sum_{i=0}^p \varphi_i \Delta (OPE)_{t-i} + \delta_1 LOG(EXPP)_{t-1} + \delta_2 CBX_{t-1} + \delta_3 (EXR)_{t-1} + \\ & \delta_4 (INF)_{t-1} + \delta_5 (INT)_{t-1} + \delta_6 (OPE)_{t-1} + u_t \end{aligned} \text{-----(5)}$$

Where, δ<sub>i</sub> is the long run multipliers, α<sub>0</sub> is the intercept and <sup>U</sup><sub>t</sub> are white noise errors. The first step in the ARDL bounds testing approach is to estimate equation (5) by Ordinary Least Squares (OLS) in order to test for the existence of a long run relationship among the variables by conducting an F-test for the joint significance of the coefficients of the lagged levels of the variables, that is: H<sub>0</sub>: δ<sub>1</sub>= δ<sub>2</sub>= δ<sub>3</sub>= δ<sub>4</sub> = δ<sub>5</sub>= 0 against the alternative H<sub>1</sub>: δ<sub>1</sub>≠ δ<sub>2</sub>≠ δ<sub>3</sub>≠ δ<sub>4</sub> ≠ δ<sub>5</sub>≠ 0 We denote the test which normalize on EXP by FEXP(EXP|CBX,EXR,INF, INT, OPE).

Two asymptotic critical value bounds provide a test for cointegration when the independent variables are I(d) [where 0≤d≤1]: a lower value assuming the regressors are I(0) and an upper

value assuming purely I(1) regressors. If the F- statistic is above the upper critical value, the null hypothesis of no long run relationship can be rejected irrespective of the orders of integration for the time series. Conversely, if the test statistic falls below the lower critical value, the null hypothesis cannot be rejected. Finally, if the statistic falls between the lower and upper critical values, the result is inconclusive. The approximate critical values for the F-statistic test were obtained from Pesaran, Shin and Smith (2001). Once cointegration is established the conditional ARDL (p, q1, q2, q3, q4,) long run model for EXPt can be estimated as:

$$\begin{aligned} LOG(EXPP)_t = & \alpha_0 + \sum_{i=1}^p \phi_i LOG(EXPP)_{t-i} + \sum_{i=0}^p \theta_i LOG(CBX)_{t-i} + \sum_{i=0}^p \lambda_i (EXR)_{t-i} + \sum_{i=0}^p \varphi_i (INF)_{t-i} \\ & + \sum_{i=0}^p \varphi_i (INT)_{t-i} + \sum_{i=0}^p \varphi_i (OPE)_{t-i} + \nu_t \text{-----} (6) \end{aligned}$$

This involves selecting the orders of the ARDL (P, q1, q2, q3, q4,) model in the five variables using Aikake Information criteria (AIC). The next step is to obtain the short run dynamic parameters by estimating an error correction model associated with the long run estimates. This is specified as:

$$\begin{aligned} \Delta LOG(EXPP)_t = & \alpha_0 + \sum_{i=1}^p \phi_i \Delta LOG(EXPP)_{t-i} + \sum_{i=0}^p \theta_i \Delta LOG(CBX)_{t-i} + \sum_{i=0}^p \lambda_i \Delta (EXR)_{t-i} + \sum_{i=0}^p \varphi_i \Delta (INF)_{t-i} \\ & + \sum_{i=0}^p \varphi_i \Delta (INT)_{t-i} + \sum_{i=0}^p \varphi_i \Delta (OPE)_{t-i} + \rho ECM_{t-1} + \nu_t \text{-----} (7) \end{aligned}$$

All coefficients of short-run equation are coefficients relating to the short run dynamics of the model's convergence to equilibrium and  $\rho$  represent the speed of adjustment and ECM is the Error Correction term that is derived from the estimated equilibrium relation of equation (7).

Furthermore, the Augmented Dickey Fuller Unit root test ADF was use to determine the stationarity of the time series data, The lag length selection criterion was determined to know the number of lag to include in the estimation because an appropriate lag selection will be able to identify the dynamics of a model (Isedu, 2013) and the structural stability test is conducted by employing the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of residual of the ARDL model.

## ANALYSIS AND DISCUSSION OF RESULTS

### Unit Root Test

Conventionally, when dealing with time series data, a number of econometric issues can influence the estimation of parameter using Ordinary Least Squares techniques (OLS). Regressing a time series variable on another time series variable using OLS estimation can obtain a very high  $R^2$  despite that there is no meaningful relationship between the variables

(Gujarati, 2007). This situation reflects the problem of misleading regression generated by a non-stationary process. Therefore, it is recommended that a stationarity test be carried out. The Augmented Dickey Fuller Unit root test was used to assess whether the variables are stationary or not and their order of integration. The result of the ADF Unit root test is shown in table 1.

Table 1: Summary of ADF Unit Root Test Results

Variable	ADF Calculated Value In Level	ADF Calculated Value At 1st Difference	Mckinnon 5% Critical Value	Order Of Integration
LOGEXPP	-3.1876	-	-2.9640	1(0)
LOGCBX	-1.4612	-7.9124*	-2.9678	1(1)
EXR	-0.8889	-3.4803*	-2.9678	1(1)
INF	-2.6798	-5.1486*	-2.9678	1(1)
INT	-4.5196*	-	-2.9640	1(0)
OPE	-3.3246*	-	-2.9640	1(0)

\*Significant at 5 per cent

The unit root test shows that deposit money bank credit to export sector (LOGCBX), inflation rate (INF) and exchange rate (EXR) are stationary at first difference since the calculated ADF is greater than the McKinnon at 5% critical values, while total export (LOGEXPP), openness of the economy (OPE) and interest rate (INT) are stationary at level because the ADF value of the variable at level is greater than the McKinnon at 5% critical values.

### Lag Length Criteria

The Lag-length selection criteria such as sequential modified LR test statistic (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hanna-Quinn information criterion (HQ) were employed to determine the appropriate lag length. The test results of the different lag selection methods are reported in the table 2. After examination of the different lag lengths by estimating the VAR at each lag length and diagnosing the whiteness of resulting residuals, three (3) lag lengths was selected base on the Aikaike Information Criteria AIC statistic, was chosen.

Table 2: VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria  
 Endogenous variables: EXPP CBX EXR INF INT OPE  
 Exogenous variables: C  
 Date: 01/22/18 Time: 12:26  
 Sample: 1986 2016  
 Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-894.9283	NA	3.57e+20	64.35202	64.63749	64.43929
1	-786.6900	162.3575*	2.19e+18	59.19214	61.19045*	59.80304
2	-746.2836	43.29253	2.38e+18	58.87740	62.58854	60.01193
3	-682.6353	40.91676	1.23e+18*	56.90252*	62.32650	58.56069*

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

### Bounds Test for Co-Integration

The subsequently step after determining the order of integration and lag length of the variables was to apply the bound F-test in order to establish the existences or otherwise of long-run relationship among the variables. The results of the bounds test for cointegration alongside with critical values are reported in Table 3 below. The Computed F-Statistic from bound test is 21.9844 exceeds the upper bounds critical value of 3.38 at the 5% significance level. This implies that the alternate hypothesis of the existence of a unique cointegration relationship between: export and the independent variables of interest rate, exchange rate, inflation, deposit money bank credit to export sector openness of the economy is upheld. This means that the null hypothesis of no co-integration is rejected.

Table 3: ARDL Bound Test Result

Test statistic	Computed F-statistic	lag	Significance level	Bound Critical values	
F-statistic	21.9844	3	5%	Lower Bounds	Upper Bounds
				I(0)	I(1)
				2.39	3.38

### Long Run Statistic Regression Results of Export

The results of the estimated long run coefficients using the ARDL approach is presented in the table 4 below. The model selected by AIC is (1, 3, 3, 3, 3).

Table 4: ARDL (3, 3, 3, 3, 3, 2) Model Long Run Results.

Variables	Coefficient	Std error	T- statistics	Pro-value
LOGCBX	-0.7534*	0.1211	-6.2227	0.0016
EXR	2.4397*	0.1751	13.9330	0.0000
INF	0.7465*	0.1162	6.4254	0.0014
INT	-5.1585*	0.3870	-13.3288	0.0000
OPE	2.4031*	0.4506	5.3329	0.0031
C	4.8271	1.9600	2.4628	0.0570

Note: \* is significant at 5% level of significance.

From Table 4 above, it could be observed that all explanatory variable except deposit money bank credit to export are consistent with the theoretical expectation. The coefficient of deposit money bank credit to export is inversely related to Nigeria total exports and also statistically significant such that one percent increase in deposit money bank credit to export leads to 0.7534 per cent decrease in the export. The inverse and significant of this variable is as a result of poor deposit money bank credit supply to export sector compared to other real sector of the economy such as agriculture, manufacturing and solid minerals. This is not consistent with Oluitan (2012), Onuorah and Ozurumba (2013) Emecheta and Ibe (2014), Olowofeso, Adeleke and Udoji (2015) who reported that deposit money bank credit to the private sector improved economic activities in Nigeria. This implies that the provision of credit facility to export sector has not significantly affect the exportation of goods and services in Nigeria on the long run. The coefficient of exchange rate shows direct and significant relationship with Nigeria total export. One percent increase in exchange rate lead to about 2.4397 per cent increase in Nigeria exportation. This is consistent with the apriori expectation. This result suggests that exchange rate depreciation contribute to exportation in Nigeria on the long run. However, the significant of this variable indicates that depreciation of naira will promoting exportation of goods and services in Nigeria all things being equal in the long run and this is consistent with Marshall linear hypothesis.

Inflation rate (INF) has a direct and significant impact on Nigeria export. One per cent increase in INF leads to 0.7465 per cent increase in Nigeria total export. This is not consistent with the apriori expectation. This implies that as inflation rate rises, some firms increase their investment in export sector. Interest rate (INT) has an inverse and significant impact on Nigeria export. One percent increase in INT leads to 5.1585 per cent decrease in export. This is consistent with the apriori expectation. This implies that as interest rate rises, some firms may not have access to credit facilities from deposit money banks which limit their access to the needed finance which could have boost their businesses, hence there is a fall in the exportation of goods and services. Likewise, if interest rate falls, firms and households may have more



money to invest in the real sector for greater profit thereby leading to increased in exportation. Furthermore, the significant of this variable is a point to the fact that interest rate as a monetary policy instrument has a robust effect on Nigeria exportation on the long run.

Trade openness of the economy (OPE) has direct and significant impact on Nigeria export. 1% increase in OPE leads to 2.403% increase in Nigeria export. This is consistent with the apriori expectation. This implies that trade policy of opening up the economy encourages export of goods and services in Nigeria on the long run. The summary of the result is that deposit money bank credit to export sector, exchange rate, interest rate, inflation and trade openness have a significant influence on the growth of Nigeria export on the long run during the study period. The Error Correction version of ARDL is estimated for equation (7) and the result is shown below.

### Short Run Over Parameterized Estimation of Export.

In order to capture the short run variation that might have occurred in estimating the long run co-integration equation, a dynamic error correction estimate is reported in Table 5.

Table 5: Error Correction Estimate for Selected of ARDL Model (3, 3, 3, 3, 3, 2)

Variable	Coefficient	Std. Error	T-Statistic	Prob.
DLOG(EXPP(-1))	-0.3718*	0.0808	-4.5982	0.0058
DLOG(EXPP(-2))	0.0801*	0.0198	4.0368	0.0100
DLOG(CBX)	-0.0305*	0.0041	-7.4890	0.0007
DLOG(CBX(-1))	0.1666*	0.0107	15.5552	0.0000
DLOG(CBX(-2))	0.1199*	0.0062	19.4485	0.0000
DLOG(EXR)	0.4609*	0.0228	20.1832	0.0000
D(EXR(-1))	0.2174*	0.0280	7.7642	0.0006
D(EXR(-2))	-0.2022*	0.0271	-7.4696	0.0007
D(INF)	-0.0144*	0.0065	-2.2103	0.0781
D(INF(-1))	-0.1269*	0.0132	-9.5856	0.0002
D(INF(-2))	-0.0688*	0.0090	-7.6524	0.0006
D(INT)	-0.3065*	0.0491	-6.2399	0.0015
D(INT(-1))	0.7073*	0.0810	8.7350	0.0003
D(INT(-2))	0.3214*	0.0336	9.5740	0.0002
D(OPE)	1.4296*	0.0221	64.5587	0.0000
D(OPE(-1))	0.5346*	0.0939	5.6904	0.0023
CointEq(-1)*	-0.3322*	0.0181	-18.4000	0.0000

R squared = 0.8987, Adjusted R-Squared = 0.8468, Durbin Watson statistic = 2.0713.

Note: \* is significant at 5% level of significance.

From table 5, the estimation indicates that previous export at lag one has an inverse and significant impact on the growth of export but the two years period lag of the total export has direct and significant impact on the Nigerian export sector. This implies that continuous exportation of goods and services enhances the growth of the Nigerian export sector. The difference in deposit money bank credit to the export sector has an inverse and significant effect on the growth of Nigerian export sector which is not consistent with the apriori expectation but at lag one and two deposit money bank credit to the export sector has direct and significant effect on the growth of Nigerian export sector which is consistent. This implies that continuous supply and demand for deposit money bank credit to the export sector has a robust effect on the growth of the sector. The difference in deposit money bank credit to export sector  $DLOG(CBX)$  in the current year has an inverse and significant impact on the growth of the Nigerian export sector. This is not in line with a prior expectation. Contrarily the difference in one and two year lag period of deposit money bank credit to the export sector  $DLOG(CBX(-1))$  and  $DLOG(CBX(-2))$  has direct and significant impact on Nigeria export sector. This confirms the fact that most export sector credits are not utilized for the purpose for which it is sorted for in the current year but continuous supply of credit to sector has the tendency to increase the performance of the export sector on the short run.

The difference of Nigeria exchange rate at the current period  $D(EXR)$  and at lag one  $D(EXR(-1))$  variable coefficient bears a direct sign. This conforms to the apriori expectation. This implies that there is a direct relationship between exchange rate and export and any increase in  $D(EXR)$  will lead to increase in exportation in Nigeria. Furthermore, the lag two year period has indirect and significant impact on Nigeria export. This implies that continuous depreciation of Nigeria exchange rate induced exportation in Nigeria. The result further revealed that the difference in inflation rate at the current period  $D(INF)$  has an inverse and insignificant impact on the Nigerian export sector. Also, the difference in inflation rate at lag one and two  $D(INF(-1))$  and  $D(INF(-2))$  have an inverse but significant impact on Nigeria's export sector on the short run. This impels that macroeconomic instability disrupt export sector performance in Nigeria. The results also show that the difference in the interest rate  $D(INT)$  has an inverse and significant effect on Nigeria export sector on the short run which conform to the a priori expectation. Also, the lag one and two of the difference in interest rate  $D(INT(-1))$  and  $D(INT(-2))$  have direct and significant effect on the export sector. This implies that a well managed interest rate enhances the performance of the export sector in Nigeria on the short run. The difference in trade openness  $D(OPE)$  and at lag one  $DLOG(OPE(-1))$  have direct and significant impact on Nigeria's export sector.

The coefficient of  $ECM(-1)$  for the estimation is found to be statistically significant at 5% level. This confirms the existence of a long run relationship between the variables. The coefficient of ECM term is -0.3322. This indicates that about 33 per cent disequilibria in the export sector in the previous one year are corrected in the current year. The significance of the ECM is a confirmation of the existence of a long run relationship between the export sector and the explanatory variables. The dynamic model diagnostic test showed that the explanatory variables account for 90 per cent of the variation in the growth of Nigeria's export sector. Thus, the overall goodness of the model was relatively satisfied. The F statistic is significant at 5 per cent level. Similarly the Durbin Watson statistic is proximately 2 which show absence of autocorrelation.

### Stability Test

Stability test was also conducted using Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of residual of the ARDL model as shown in figures 1 and 2. The existence of the parameter of instability is established if the Cumulative Sum of the residual goes outside the area between the critical (dotted bounded) lines. It is estimated at 5 percent critical level. From figures 1 and 2, it can be inferred that the model at 5 percent level of significance has been stable over time.

Figure 1: Plot of Cumulative Sum of Recursive Residual

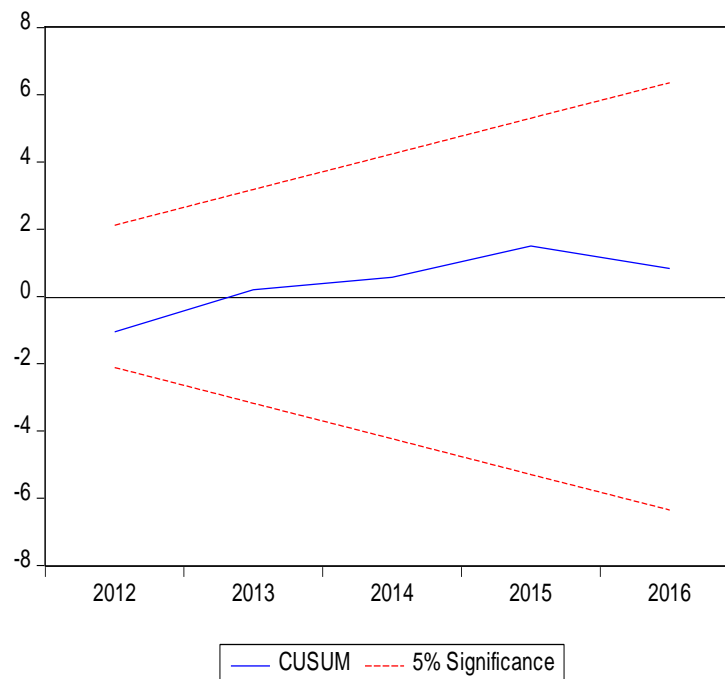
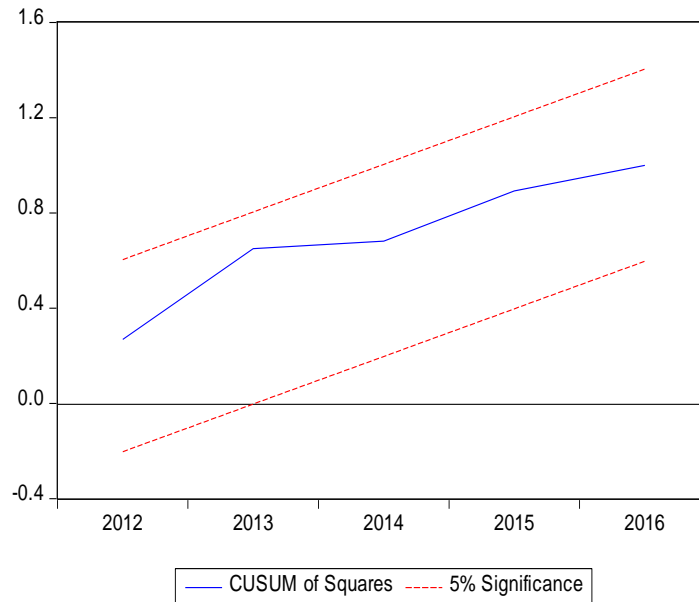


Figure 2: Plot of Cumulative Sum of Square of Recursive Residual Results



## CONCLUDING REMARKS

The premise of this study examined the contribution of deposit money bank credits to the export sector in Nigeria. The study employed the ARDL bounds testing approach to cointegration analysis popularised by Pesaran, Shin and Smith (2001) to establish the long run relationship between the relevant time series variables. The unit root test results revealed that all the variables were either  $I(0)$  or  $I(1)$  stationary. Also, export was found to be co-integrated with the independent variables. This means that long run relationship between the variables of interest were established. The empirical findings showed that deposit money bank credits to export sector has an inverse but significant impact on the Nigeria export sector in the long run but on the short run deposit money bank credit to export sector has an inverse and significant impact on the Nigeria export sector but at lag one and two in the short run deposit money bank credit to export sector has direct and significant impact on the Nigeria export sector. This implies that continuous supply of credit to export sector has the tendency to encourage exportation in the Nigerian economy.

Furthermore, exchange rate, interest rate, inflation rate have significant effects on Nigeria's export sector and the stability test conducted using the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of the residual show that the ARDL model is stable. Therefore, the study recommends that there is need for exchange rate depreciation and stability. This will make export cheaper and induces the performance of Nigerian export sector, interest rate should be reduced to make loanable funds cheaper for investors in the export

sector of the Nigerian economy, the monetary authority should put in place adequate policies towards deepening the financial sector to encourage supply of credits to the export sector and reduce the cost of credits. Such policies should, however, be accompanied with other complementary strategies that enhance productivity and consequently the growth of oil and non oil export sectors which will have a spillover effect on the growth of export sector both in the short and long runs.

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## APPENDICES

### Appendix 1: Performance of the Nigeria export sector (1986-2016)

Year	Gross Domestic Product		Total Non Oil		Growth Rate of Export	Growth Rate of Non Oil Export	% Share of Oil Export	% Share of Non Oil Export	% Share of Export in Total Export	% Share of Export Sector to GDP
	Total N Billion	Export N Billion	Total Oil Export N Billion	Non Oil Export N Billion						
1986	202.44	8.9	8.4	0.6			94.16	6.73	4.4	
1987	249.44	30.4	28.2	2.2	240.3	236	266.7	92.88	7.25	12.2
1988	320.33	31.2	28.4	2.8	2.7	0.71	27.27	91.05	8.98	9.74
1989	419.20	58.0	55.0	3.0	85.8	93.7	7.143	94.87	5.17	13.8
1990	499.68	109.9	106.6	3.3	89.6	93.8	10	97.01	3.00	22
1991	596.04	121.5	116.9	4.7	10.6	9.66	42.42	96.19	3.87	20.4
1992	909.80	205.6	201.4	4.2	69.2	72.3	-10.6	97.95	2.04	22.6
1993	1,259.07	218.8	213.8	5.0	6.4	6.16	19.05	97.73	2.29	17.4
1994	1,762.81	206.1	200.7	5.3	(5.8)	-6.13	6	97.40	2.57	11.7
1995	2,895.20	950.7	927.6	23.1	361.4	362	335.8	97.57	2.43	32.8
1996	3,779.13	1,309.5	1,286.2	23.3	37.8	38.7	0.866	98.22	1.78	34.7
1997	4,111.64	1,241.7	1,212.5	29.2	(5.2)	-5.73	25.32	97.65	2.35	30.2
1998	4,588.99	751.9	717.8	34.1	(39.4)	-40.8	16.78	95.47	4.54	16.4
1999	5,307.36	1,189.0	1,169.5	19.5	58.1	62.9	-42.8	98.36	1.64	22.4
2000	6,897.48	1,945.7	1,920.9	24.8	63.6	64.2	27.18	98.72	1.27	28.2
2001	8,134.14	1,868.0	1,839.9	28.0	(4.0)	-4.22	12.9	98.50	1.50	23
2002	11,332.25	1,744.2	1,649.4	94.7	(6.6)	-10.4	238.2	94.57	5.43	15.4

2003	13,301.56	3,087.9	2,993.1	94.8	77.0	81.5	0.106	96.93	3.07	23.2
2004	17,321.30	4,602.8	4,489.5	113.3	49.1	50	19.51	97.54	2.46	26.6
2005	22,269.98	7,246.5	7,140.6	106.0	57.4	59.1	-6.44	98.54	1.46	32.5
2006	28,662.47	7,324.7	7,191.1	133.6	1.1	0.71	26.04	98.18	1.82	25.6
2007	32,995.38	8,309.8	8,110.5	199.3	13.4	12.8	49.18	97.60	2.40	25.2
2008	39,157.88	10,387.7	9,861.8	525.9	25.0	21.6	163.9	94.94	5.06	26.5
2009	44,285.56	8,606.3	8,105.5	500.9	(17.1)	-17.8	-4.75	94.18	5.82	19.4
2010	54,612.26	12,011.5	11,300.5	711.0	39.6	39.4	41.94	94.08	5.92	22
2011	62,980.40	15,236.7	14,323.2	913.5	26.9	26.7	28.48	94.00	6.00	24.2
2012	71,713.94	15,139.3	14,260.0	879.3	(0.6)	-0.44	-3.74	94.19	5.81	21.1
2013	80,092.56	15,262.0	14,131.8	1,130.2	0.8	-0.9	28.53	92.59	7.41	19.1
2014	89,043.62	12,960.5	12,007.0	953.5	(15.1)	-15	-15.6	92.64	7.36	14.6
2015	94,144.96	8,845.2	8,184.5	660.7	(31.8)	-31.8	-30.7	92.53	7.47	9.4
2016	101,489.49	8,835.6	8,178.8	656.8	(0.1)	-0.07	-0.59	92.57	7.43	8.71
Mean	25978.59	4833.79	4579.39	254.41	39.67	39.96	42.60	95.77	4.27	20.50

## Appendix 2: Financial deepening in the Nigeria export sector (1986-2016)

Year	Total bank credit to the Nigerian Economy <b>(Billion Naira)</b>	Total bank credit to the Nigerian Export sector <b>(Billion Naira)</b>	Share of Export Credit to Total Credit	Growth Rate of Export Credit	Financial Deepening in the Export Sector
1986	8.9	15.7	1.91	-	3.37
1987	30.4	17.5	2.86	66.67	1.64
1988	31.2	19.6	2.55	0	1.6
1989	58.0	22.0	2.73	20	1.03
1990	109.9	26.0	2.69	16.67	0.64
1991	121.5	31.3	2.88	28.57	0.74
1992	205.6	42.7	3.04	44.44	0.63
1993	218.8	65.7	2.44	23.08	0.73
1994	206.1	94.2	8.07	375	3.69
1995	950.7	144.6	13.4	155.3	2.04
1996	1,309.5	169.4	19.5	70.1	2.52
1997	1,241.7	385.6	16.4	-50.3	1.32
1998	751.9	272.9	10.9	81.71	3.96
1999	1,189.0	322.8	18.8	-36.9	1.58

2000	1,945.7	508.3	25.3	4.98	34.57	1.3
2001	1,868.0	796.2	34.5	4.33	36.36	1.85
2002	1,744.2	954.6	26.7	2.8	-22.6	1.53
2003	3,087.9	1,210.0	34.5	2.85	29.21	1.12
2004	4,602.8	1,519.2	31.3	2.06	-9.28	0.68
2005	7,246.5	1,976.7	26.4	1.34	-15.7	0.36
2006	7,324.7	2,524.3	52.7	2.09	99.62	0.72
2007	8,309.8	4,813.5	66.6	1.38	26.38	0.8
2008	10,387.7	7,799.4	75.2	0.96	12.91	0.72
2009	8,606.3	8,912.1	45.9	0.52	-39	0.53
2010	12,011.5	7,706.4	44.8	0.58	-2.4	0.37
2011	15,236.7	7,312.7	36.2	0.5	-19.2	0.24
2012	15,139.3	8,150.0	65.6	0.8	81.22	0.43
2013	15,262.0	10,005.6	3.9	0.04	-94.1	0.03
2014	12,960.5	11,475.2	807.7	7.04	20610	6.23
2015	8,845.2	13,222.7	1,058.7	8.01	31.08	12
2016	8,835.6	15,829.3	1,008.5	6.37	-4.74	11.4
Mean	4833.79	3430.52	115.35	4.18	718.29	2.12