IMPACT OF EXCHANGE RATE ON NON-OIL EXPORTS IN NIGERIA

BY

EDUNO, Ededet Bassey

Abstract
This research examined the impact of exchange rate on non-oil exports in Nigeria between 1980 and 2018 using the Autoregressive distributed lag model (ARDL). The results revealed that there exists no long run relationship between exchange rate and non-oil exports in Nigeria. It also revealed that exchange rate has a negative and insignificant relationship with Non-Oil sector under the evaluation period, trade Openness from the result has a positive and insignificant relationship with Non-oil exports, credits to the private sector has a positive and significant relationship with Non-oil exports, GDP from the result has a positive and significant relationship with non oil export and inflation rate has a positive and insignificant relationship with non oil export under the evaluation period. The study recommended that the monetary authority should ensure exchange rate stability in order to stem inflationary tendencies in Nigeria which have adverse effect on the growth of non-oil export and the government should encourage stability in macroeconomic environment and employ growth oriented and stabilization policies especially at macro level which will help the country gain from trade with the advanced countries, induce the diversification, as well as the growth and development of Nigerian economy.

Key Words: *Exchange rate, Non-oil exports, ARDL*

Introduction

Exchange rate is the price of a domestic currency in terms of another currency (international), it is one of the most important variable in international trade sectors. The robustness and condition of the exchange rate system determine the outcome of international trade, which have a great effect on the balance of payment.Exchange rate bear on trade by determining the relationship between international and domestic prices. However, changes in the real exchange rate result in the rising or lowering of the prices of Nigerian goods in local currency terms around the globe. A rise in naira raises the price of Nigerian goods on the international market, while a fall in naira lowers these prices. The fluctuation of exchange rates makes the exports/imports costlier or cheaper and also the unstable tendency of this variable attaches a level of uncertainty or risk to trade.

The performance of export depends on the favourable international market couple with stable exchange rate and risk inherent in the international trade.Interestingly, many studies have provided evidence of high exchange rate volatility in Nigeria arising from the deregulation of the exchange rate in mid 1986 (Akpokodje, 2007; Yinusa & Akinlo, 2008; Yinusa, 2008). This has raised concerns on the impact of exchange rate volatility on exports especially the non-oil exports.

To enhance the competitiveness of the non-oil sector and the growth of SMEs, there is need for a stable exchange foreign exchange rate regime in the country. This will not only expand the market for the sector but will stimulate innovation and also improve the quality of the products.

Despite various efforts by the government to maintain a stable exchange rate, the naira has depreciated throughout the 80's to date. Today, there is growing agreement in literature that prolonged and substantial exchange rate misalignment can create severe macroeconomic disequilibria and the correction of external balance will require both exchange rate devaluation and foreign exchange rate demand management policies (Alalade, Adekunle and Joseph, 2014).

Despite various policies and incentives implemented in Nigeria to promote non oil exports, the sector has continued to lag significantly behind the oil export. Statistics have shown that comparative contribution of oil sector and non oil sector to total exports has been highly disproportionate, with oil sector export contributing the lion's share while the non oil sector contributed a paltry proportion. For instance, oil export in 1970 was N509.6 million, representing 57.5% of total export against N376.0 million or 42.5% from non oil sector.

In 1980, oil sector contributed N13632.3 million or 96.1% of total export, leaving only N554.4 million or 3.9% for non oil sector. By 1990, 2000, 2008 and 2009, oil exports were N106,626.5 million (97%), N1,920,900.4 million (98.7%), N9,659,772.6 million (97.5%) and N8,543,261.2 million (96.7%) respectively against N3,259.6 million (3%), N24,822.9 million (1.3%), N247,839.0 million (2.5%) and N289,152.6 million (3.3%) respectively for non oil export during the same periods.

By 2012, total oil export trade has increased to N14,526,756.98 million, representing 96.8 of the total export while non-trade export stood at N15,002,867.70 million, representing 3.2 per cent of total export in Nigeria. By 2014, oil export stood at N1,200,696,528.18 millions, representing 92.6 percent of the total export, while non oil export was N953528.18 million, representing 7.4 per cent of the total exports (CBN, 2014).

Furthermore, empirical studies on the impact of exchange rate policies on non-oil exports in Nigeria and other countries showed mixed results. While some studies established a positive relationship between exchange rate policies and the non-oil exports, some other studies found a negative relationship of exchange rate policies on the non-oil exports. For instance, studies such as Akinlo and Adejumo (2014), Oriavivote and Eshenake (2015) and Fatemeh, Parichehr and Maryam (2014) have found positive relationship between exchange rate policies and non-oil exports. On the other hand, studies such as Olufayo and Fagite (2014), Alalade, Adekunle and Joseph (2014), Imoughele and Ismaila (2015), Hasanov and Samadova (2010) for Azerbaijan, Oaikhenan and Nwokoye (2015), among others have established that there is a negative relationship between exchange rate policies and non-oil exports.

The mixed results from previous studies make it difficult to make a general conclusion about the impact of exchange rate policies on non-oil exports in Nigeria. Therefore, the basic statement of problem of this study is whether exchange rate policies have help in promoting the growth of the non-oil exports in Nigeria. It is against these backgrounds, that this question arises: what is the impact of exchange rate policies on non-oil exports in Nigeria?

The main objective of this study is to examine the impact of exchange rate on non-oil exports in Nigeria between 1980 and 2018. The remaining part of the paper is structured as follows: next is the literature review and theoretical framework, followed by the methodology in section III, results and discussions of findings are in section IV. Conclusions and recommendations are in section V.

Literature Review and Theoretical Framework

Empirical Issues

Akinlo and Adejumo(2014) investigates the impact of exchange rate volatility on non-oil exports in Nigeria between 1986 and 2008.The paper confirms the existence of statistically significant relationship between real exports and exchange rate volatility. The results show that exchange rate, exchange rate volatility and foreign income have significant positive effects on non-oil exports in the long run. Imports, on the other hand, have a statistically negative effect on exports in the long run. The ECM results show that lagged foreign income has significant positive effect on non-oil exports. The coefficient of imports is positive supporting the import compression hypothesis in the short run. The results show that short run impact of the exchange rate volatility is statistically insignificant. The positive coefficient of the exchange rate variable (though not significant) suggests that an appreciable depreciation of the exchange rate could lead to increase in non-oil exports in Nigeria. Essentially, the results suggest that the exchange rate volatility is only effective in the long runbut not in the short run in the case of Nigeria.

Olufayo and Fagite (2014) explored the effects of exchange rate volatility on the exports performance of both oil and non-oil sectors. The paper employed the econometrics method of GARCH in measuring volatility of exchange rate and seemingly unrelated regression method (SUR) in estimating the coefficient of the two system equation. ARCHand GARCH results suggested that the exchange rate is volatile, while SUR model shows that exchange rate has negative effect on the two sectors, though statistically not significant. Therefore, for the country export toimprove, the country should adopt inward looking policy in order to enhance her capability to export and reducethe vulnerability of the country to the external shocks.

Alalade, Adekunle and Joseph (2014) investigated the effect exchange rate regimes as had on non-oil export revenue. It specifically ascertained the effects of some macroeconomic variables (inflation, price index, gross domestic product (GDP), exchange rate and degree of openness) as had on non-oil export revenue in Nigeria as well as the performance of the non-oil export sector over the period 1986 to 2010.Using

annual data from 1986 to 2010: The study employed a non-oil model proposed by Mehdi S.(2011), Augmented Dickey Fuller unit root test, Eagle-Granger approach to test co-integration in the long run, and error correction model to correct short run deviations. The study broke down data in three period's and discussed each periods result with the three periods combined and also compared these results with other similar works. The study discovered that exchange rate, degree of economic openness, GDP, inflation rate and price index collectively accounts for 97.7 per cent variations in non-oil export variations. The study also discovered a one per cent increase in the naira exchange rate result to 0.4 per cent decrease in non-oil export revenue. It also discovered that GDP (2.34 per cent) accounts for the highest individual variations in non-oil export revenue. The study recommended an appropriate policy mix that encourages a conducive atmosphere for domestic and international production. Imoughele and Ismaila (2015) examines the impact of exchange rate on non oil export. The study used time series data obtained from CBN for a period of 27 years that is 1986 to 2013. Augmented Dickey-Fuller (ADF) test was used for the unit root test and Johansen's co-integration test was also conducted to establish short and long run relationships between non-oil exports and independent variables. The result shows three co-integrating equations which establish the existence of long run relationship among the variables. Ordinary Least Square statistical technique was used to assess the determinants of non-oil export in Nigeria. The results show that effective exchange rate, money supply, credit to the private sector and economic performance have a significant impact on the growth of non-oil export in the Nigerian economy and appreciation of exchange rate has negative effect on non-oil export which is consistent with the economic theory. Following this, the study recommended among others that monetary authority should ensure exchange rate stability in order to stem inflationary tendencies in Nigeria which have adverse effect on the growth of non-oil export.

Oriavwote and Eshenake(2015) empirically evaluate the impact of the Real Effective Exchange Rate on non oil exports in Nigeria. The study covered the period between 1980 to 2014. The cointegration technique was applied to estimate the data. The result of the ADF unit root test indicates that all the variables are I(1). The result of the Johansen cointegration test suggests a long run relationship among the variables. The parsimonious ECM result indicates that the Real Effective Exchange Rate and the degree of openness have positive and significant impact on non-oilexports in Nigeria. The ARCH/GARCH results indicate that the volatility of the REER has influenced the level of non-oil exports in Nigeria. The result recommends further devaluation of the exchange rate backed by increased domestic production through a diversified production base.

Hasanov and Samadova(2010) investigated the impact of the real exchange rate on non-oil exports in Azerbaijan by applying Vector Error Correction Model. The estimation results suggest that real exchange rate has negative impact on non-oil export performance while non-oil GDP affects positively in the long- and short-run. Error correction term indicates that short-run fluctuation can be adjusted into long-run equilibrium relationship.Based on findings of the study can be concluded that appreciating real exchange rate is one of major factors that impede non-oil export

growth.Since promotion of non-oil export is one of the urgent issues of the strategic economic policy of Azerbaijan Republic then findings of this study may be useful for policymakers.

Oaikhenan and Nwokoye(2015) examined empirically the impact of exchange rate variability, captured as exchange rate depreciation and exchange rate instability, on non-oil exports in Nigeria over the 1975 to 2005 sample period. The study finds that exchange rate instability has a significant negative effect on non-oil exports in Nigeria. Exchange ratedepreciation affects it positively but in an insignificant way. The results suggest that efforts at boosting the country's non-oil exports may be more successful if efforts are made at arresting the problem of instability in exchange rate rather than promoting its depreciation.

Samimi, Heydarizadeh and Madadi (2012) investigated the relationship and impacts of uncertainty in currency exchangerate on non- oil exports in Iran. The case study covers the years between 1978 to 2008. The results of this assessment have been generalized by using the generalized auto-regressive conditional heteroskedasticity (GARCH) and ordinary auto-regressive conditional heteroskedasticity (ARCH) show that uncertainty in real exchange rate during the period subject of study had negative impacts on non – oil exports in Iran.

Fatemeh, Parichehr, Faegheh and Maryam (2014) investigated impact of official exchange rate on non-oil exports of OPEC countries between 1975 and 2010. The statistical population of the investigation consists of oil countries including Iran, Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Venezuela, Nigeria, Libya, and Ecuador. The time series statistics are collected from Central Bank of the Islamic Republic of Iran and the World Bank. Data analysis is performed in the form of panel data in the software Eviews 7.Necessary tests for studying durability of under-study variables, panel data, and needed tests for studying the model with fixed or random effects are carried out using Hausman statistics, and required tests for recognition of co-linearity have been also done.The results show that there is a positive and significant relationship between non-oil exports and official rate of exchange. Indeed, non-oil exports increase with an increase in exchange rate and vice versa. Because with increased official rate of exchange, the actual value of domestic currency decreases and domestic goods will be cheaper for foreigners and exports will increase. Also, considering the model estimation it is seen that in OPEC countries there is a positive significant relationship between domestic production, domestic price, trading, and prior period non-oil exports with non-oil exports.

Theoretical Framework

This theory states that equilibrium exchange rate between two inconvertible paper currencies is determined by the equality of the relative change in the price levels in the two countries. International competitiveness is measured by comparing the relative prices of the good from different countries when these are measured in a common currency. The Purchasing Power Parity Path for the nominal exchange rate is the path that would keep competitiveness constant overtime.

According to this theory, countries with higher domestic inflation than their competitors would face a depreciating nominal exchange rate, while countries with lower domestic inflation than their competitors would face appreciating exchange rates.

Research Methodology

Research Design

The time series data were adopted in this empirical work. To avoid spurious regression analysis, the Augmented Dickey Fuller (ADF) unit root test was adopted to determine the level of integration or stationarity of the time series data. Given the different levels of stationarity of the variables, the Autoregressive distributed lag model (ARDL) test was carried out to determine the existence of a long-run relationship among the variables in the model.

Model Specification

This model is anchored on the purchasing power parity theory which states that equilibrium exchange rate between two inconvertible paper currencies is determined by the equality of the relative change in the price levels in the two countries and the staple theory of growth which is one of the macro-dynamic models of how economic growth can be promoted by export expansion. The theory identifies primary agricultural raw materials as the idle resources for exportable commodity, for venting staple refers to raw materials or resource intensive commodity occupying a dominant position in a country's export. The model was estimated as follows:

NOE= f(EXCHR, GDP, M2,INFL,BOP, OPEN)……..1

Where:

NOE= Non-Oil Exports (NOE)
EXCHR = Exchange rate (EXCHR)
GDP = Gross Domestic Product (GDP)
CPS = Credits to the Private Sector (CPS)
INFL = Inflation Rate (INFL)
OPEN = Openness (OPEN)

Model Estimation Procedure

The specified model was estimated using the multiple regression analysis. This is because the explanatory variables specified in the model above are more than one, thus prompting the adoption of the multiple regression econometric technique for this study. The model was estimated in both the linear and non-linear forms;

In the linear form,

$NOE=a_0+a_1EXCHR+a_2GDP+a_3OPEN+a_4CPS+a_5\ INFL+U_1$.....2

Was estimated where $U_{1=}$ stochastic error term and other variables as earlier defined.$a_0$is the constant term;a_1,a_2,a_3,a_4,and a_5 are the regression coefficients.$a_{1>0}$,$a_{2>0}$,$a_{3>0}$,$a_{4><0}$, $a_{5<0}$.

We also estimated the above equation in the non-linear form:

$LnNOE = b_0 + b_1 lnEXCHR + b_2 lnGDP + b_3 lnOPEN + b_4 CPS + a_5\ lnINFL + U_2$-------3

Where b_0=constant term;b_1,b_2,b_3,b_4 and b_5 are the regression coefficients.$b_{1>0}$,$b_{2>0}$,$b_{3>0}$,,$b_{4>0}$, $b_{5<0}$.
Estimated coefficients were evaluated on the basis of the apriori, statistical and econometric criteria.

Data and Sources
Data for studies were extracted from secondary time series data of Central Bank of Nigeria statistical bulletins 2009, 2013 and 2018, CBN Annual reports 2010and National Bureau of statistics 2012 as well as researcher's computation

Results and Discussions of Findings
4.1 Unit root tests for the variables
Table 4.1: Phillip-Perron (PP) Test of Unit Roots

Variables	**Level (first difference)**	**Phillip-Perron Criticalvalue (5%)**	**Order of Integration**	**Remark**
OPEN	-5.572703	-2.941145	I(0)	Integrated of order zero
CPS	3.099340 (-3.226915)	-2.941145 -2.943427	I(1)	Integrated of order one
EXCHR	-0.482747 (-8.744459)	-2.941145 -2.943427	I(1)	Integrated of order one
GDP	-2.393306 (-8.007720)	-2.941145 -2.943427	I(1)	Integrated of order one
INFL	-2.753437 (-10.68399)	-2.941145 -2.943427	I(1)	Integrated of order one
NOEXP	-0.613761 (-5.466434)	-2.941145 -2.943427	I(1)	Integrated of order one

Researcher's computation, 2020
From table 4.1, using the Phillip-Perron (PPTest of Unit Root only OPEN is stationary at level the other variables namely, CPS, EXCHR, GDP, INFL and NOEXP are all stationary at first difference.

Lag length selection criteria:
The result of the lag length criteria is presented in tables 4.2. The lag length of two (2) was selected for the equation based on the Akaike information criterion and Schwarz information criterion.

Table 4.2:**Lag length selection criteria**
VAR Lag Order Selection Criteria
Endogenous variables: NOEXP CPS EXCHR GDP INFL
OPEN
Exogenous variables: C
Date: 03/30/20 Time: 17:49
Sample: 1980 2018
Included observations: 37

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1602.045	NA	2.26e+30	86.92133	87.18256	87.01343
1	-1460.194	230.0280	7.62e+27	81.19968	83.02829	81.84435
2	-1393.981	85.89808*	1.75e+27*	79.56654*	82.96253*	80.76379*

* 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

Table 4.3: Bounds Tests for the Existence of Cointegration
ARDL Bounds Test
Date: 03/30/20 Time: 17:52
Sample: 1982 2018
Included observations: 37
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.935322	5

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Test of cointegration for the equation indicates that the computed F-statistic of 1.935322 is lower than the lower and upper bounds critical values of 2.96 and 4.18, respectively at the 5 per cent significance level, using Pesaran et al (2001). Therefore, the null hypothesis of no cointegration is accepted, meaning that there is absence of a long run relationship among noexp, cps, cps, exchr, gdp and open.

4.2.4 Short-run ARDL Result

Table 4.4: Estimates of the Short Run Coefficients ARDL
Dependent Variable: Non oil export

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPS)	0.030626	0.019151	1.599207	0.1210
D(CPS(-1))	0.052569	0.019284	2.726052	0.0109
D(EXCHR)	-0.290803	0.253114	-1.148903	0.2603
D(GDP)	0.000006	0.000002	4.035378	0.0004
D(INFL)	0.040701	0.782941	0.051984	0.9589
D(OPEN)	17.326414	54.955430	0.315281	0.7549
ECM (-1)	-0.811185	0.163579	-4.958976	0.0000

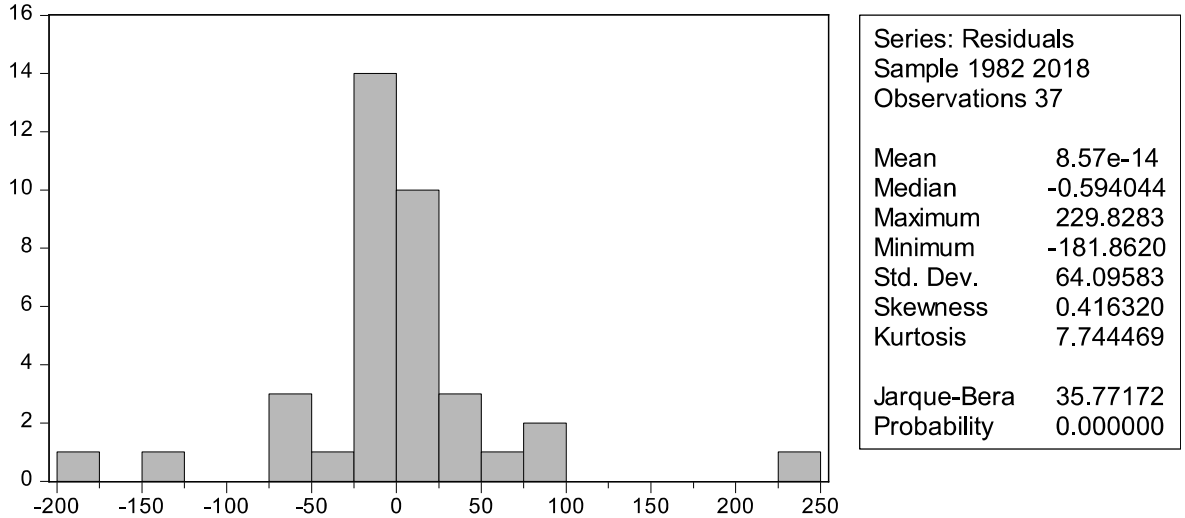
The short run coefficients of the equation are presented in Table 4.4. As shown, the estimates of one year lag value of credit to private sector and one and year present value of GDP are statistically significant at 5 percent implying that these variables seem to impact significantly on non oil export in the short run in Nigeria. Also from the result, present values of credit to private sector, exchange rate, inflation rate and openness are not statistically significant since their p-values are less than 0.05.

The present value of exchange rate has a negative coefficient. The exchange rate indicates that in the short run, a one per cent increase in exchange rate reduces non oil exportsby 0.29 per cent. On the other hand, estimates of present values of CPS, GDP, INFL, OPEN as well as one year lag value of CPS all have positive coefficients indicating that a one per cent increases in present values of CPS, GDP, INFL, OPEN as well as one year lag value of CPS will increase non oil exports by 0.03, 0.000006,0.04, 17.3 and 0.05 percents respectively in the short run. Furthermore, the coefficient of ECM has the correct sign which is negative as well as statistically significant at 5 per cent level. The ECM result indicates a fast speed of adjustment of about 81.12 per cent from the short run to the long run.

4.2.5 Diagnostic Tests

4.2.5.1 Normality Test

H0: Residual is multivariate normal **H1**: Residual is not multivariate normal



Jacque Bera stat with value 35.77172 and prob. Value of 0.000000 which is less than 0.05 levels. Hence, thestudy rejects the null hypothesis which specified that the residual is not normally distributed.

4.2.5.2 Test for Residual Auto-Correlation
Breusch-Godfrey Serial Correlation LM Test.

H0: there is no serial correlation.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.205894	Prob. F(2,26)	0.8152
Obs*R-squared	0.576870	Prob. Chi-Square(2)	0.7494

From the above table, considering the prob Chi- square value of 0.7494 which is greater than 5%. Hence, the studyrejects the H0 which specified that there is a serial auto-correlation.

4.2.5.3 Heteroscedasticity Test

H0: there is no ARCH effect

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	4.405013	Prob. F(8,28)	0.0015
Obs*R-squared	20.61799	Prob. Chi-Square(8)	0.0082
Scaled explained SS	39.81775	Prob. Chi-Square(8)	0.0000

From the table above, the prob. chi-square value of 0.0082 which is less than 0.05 level of significance.The result indicates rejection of null hypothesis of equal or constant variance. This implies existence of homoskedasticity. Non equal variance or heteroskedasticity is therefore assumed.

Discussions of Findings
From the results, exchange rate has a negative and insignificant relationship with Non-Oil sector in Nigeria. The finding is not consistent with apriori expectation. This outcome could be that the depreciation of the naira has made imported machineries needed by the firms in the non-oil sector to be unaffordable thereby impeding production and growth of the non-oil sector. This finding agree with that of Olufayo and Fagite(2014), Alalade, Adekunle and Joseph(2014), Imoughele and Ismaila(2015), Hasanov and Samadova (2012) as well as Samimi, Heydarizadeh and Madadi(2012) whose studies indicated that exchange rate has a negative and insignificant relationship with non-oil exports.

Trade Openness from the result has a positive and insignificant relationship with Non-oil exports. This result conforms to economic theory and depicts that Nigeria has fully reaped the benefits globalization in terms of her trade with the advanced economies. The findings do not supports that of Imoughele and Ismaila (2015) but agrees with the findings of Oriavwote and Eshenake (2015) whose study revealed a positive and significant relationship between trade openness and non-oil exports.

From the result credits to the private sector has a positive and significant relationship with Non-oil exports. This result conforms to economic theory. This depicts that the more credit is given to the private sector of the economy, the more opportunities exist in the non-oil sector of Nigeria economy for accelerated investments and sustainable growth. The findings supports that of Imoughele and Ismaila (2015) whose study showed a positive and significant relationship between private sector credits and non-oil sector in Nigeria.
GDP from the result has a positive and significant relationship with non oil export in Nigeria.This outcome maybe that increases in the productive capacity of the economy enhances productive investments in the non oil sector of the economy.

Finally, inflation rate has a positive and insignificant relationship with non oil export inNigeria. The positive relationship may be that the increases in prices of goods and services in the economy lead to a rise in the profits in the non oil sector.

Conclusions and Recommendations

Conclusions

The study examined the impacts of exchange rate on non oil exports in Nigeria from 1980 to 2018. It is concluded from the findings that exchange rate has a negative and insignificant relationship with non oil exports in the short run, present value of CPS has a positive and insignificant relationship with non oil export in the short run, one year lag value of CPS has a positive and significant relationship with non oil exports in the short run, GDP has a positive and significant relationship with non oil exports in the short run, inflation rate has a positive and insignificant relationship with non oil exports in the short run and openness has a positive and insignificant .relationship with non oil exports in the short run.

Recommendations

Based on findings in this study, the following recommendations are offered:

(i) Monetary authority should ensure exchange rate stability in order to stem inflationary tendencies in Nigeria which have adverse effect on the growth of non-oil export.

(ii) Government should encourage stability in macroeconomic environment and employ growth oriented and stabilization policies especially at macro level which will help the country gain from trade with the advanced countries, induce the diversification, as well as the growth and development of Nigerian economy.

References

Adeloye, L., 2012. Non-Oil Exports: Role of Incentives and Challenges. Punch 24 February, 2012.

Alabi, S. 2011. Nigerian Daily, March, 2011

Akinlo,A.E&Adejumo,V.A.(2014).Exchange Rate Volatility and Non-oil Exports in Nigeria: 1986-2008.*International Business and Management***.** 9(2), 2014 ,70-79

Akpokodje, G. O. (2007*). Exchange rate volatility and external trade performance of selected African countries, 1973- 2003 (Ph. D thesis)*. University of Ibadan, Nigeria.

Alalade,S.A; Adekunle,O.A.&Joseph,O.A.(2014).Foreign Exchange Rate Regimes and Non-Oil Export Performance in Nigeria (1986 – 2010).*International Journal of Business and Behavioral Sciences 4(1),1-22.*

Alireza,K.& Majid,F.(2010).The Impact of the Real Exchange Rate Volatility on Non-oil Exports: The Case of Iran.*International Economic Studies.*36 (1) , 9-18

Aliyu, S.R.U. (2011). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation, *Research Journal of International Studies*.

Benson , U.O & Victor, E.O (2012). Real Exchange Rate and Macroeconomic Performance: Testing for the Balassa-Samuelson Hypothesis in Nigeria. *International Journal of Economics and Finance*: 4 (2), 127-134.

Central Bank of Nigeria, (2000), The Structure of the Nigerian Economy and Implications of Development. Ream Communications Ltd. Lagos :198 - 199.

Central Bank of Nigeria Bullion.Vol.30, No.3.July – September, 2006

Dernbug,T.F (1989) Global Macroeconomics.Newyork: Harper & Row

Fatemeh,M; Parichehr,N;Faegheh,M.&Maryam,M.(2014).Effect of Exchange Rate on Non-Oil Exports of OPEC Countries.*Applied mathematics in Engineering, Management and Technology* 2 (2), 566-575

Hasanov,F.(2012).The impact of the real exchange rate on non-oil exports. Is there an asymmetric adjustment towards the equilibrium? RPF Working Paper No. 2012-005 http://www.gwu.edu/~forcpgm/2012-005.pdf:1-22.

Hasanov,F. & Samadova,I.(2010).The Impact of Real Effective Exchange Rate on the Non-oil Export: The Case of Azerbaijan. Online at http://mpra.ub.uni-muenchen.de/29556/

Imoughele,L.E.& Ismaila,M.(2015).The Impact of Exchange Rate on Nigeria Non-Oil Exports.

International Journal of Academic Research in Accounting, Finance and Management Sciences 5(1) ,190–198

Nwidobie, M. (2011). An Impact Analysis of Foreign Exchange Rate Volatility on Nigeria's Export Performance. *European Journal of Economics, Finance and Administrative Science*.Issn 1450-2275 Issue 37.

Oaikhenan,H.E.& Nwokoye,G.A.(2015).Exchange Rate Variability and Non-Oil Exports In Nigeria: Empirical Evidence.*I J M T P* **:**7(1-2),17-34.

Obadan, M. I. (2000). External sector performance and the external sector policy measures in the year 2000 Federal Budget. *Bullion Publication of the Central Bank of Nigeria,* 24(2), 32- 69

Ogunleye, E. (2008). Natural resources abundance in Nigeria: from dependence to development. *Resources policy.*

Okoh, R. N. (2004), *Global Integration and the Growth of Nigeria's Non-oil Exports*. A Paper Presented at the African Conference, 21-22 March, Oxford, U.K.

Olukole, R. (2002). *The foreign Exchange market in Nigeria.*The Chartered Institute of Bankers of Nigeria. R.A. Olukole.

Olufayo,M.B.& Fagite,B.A.(2014).Exchange Rate Volatility and Sectoral Export of Nigeria: Case of Oil and Non-Oil Sectors. *Journal of Economics and Sustainable Development*; 5(10) ,66-75

Omojimite,B.U.& Akpokodje,G.(2010).The Impact of Exchange Rate Reforms on Trade Performance in Nigeria.*Journal of Social Science*, 23(1), 53-62

Onwualu, A. P. (2013). Growth and development of the Nigeria non-oil sector: key to successful economic diversification: a presentation at the 51 AGM/conference of NACCIMA held at Hotel de Askey, Sagamu, Remo, Ogun State. Available at: www.rmrdc.gov.ng

Oriavwote,V.E.& Eshenake,S.J.(2015).Real Effective Exchange Rate and Non-Oil Exports Performance in Nigeria :An Empirical Reflection**.** *International Journal of Business, Humanities and Technology 5(6),55-62.*

Oyejide, T. (1986).The effect of trade exchange rate policies on agriculture in Nigeria.*Research report 55, international food policy research institute.Washington* D. C.

Samimi,A.J; Heydarizadeh,N.& Madadi,M.(2012).Exchange Rate Uncertainty and Non-Oil Exports: The Case of Iran. Middle-East Journal of Scientific Research 11 (2), 162-166

Sanusi, J.O. (2003, August). *Developing the non-oil sector in Nigeria.*Keynote address delivered at the 8th monetary policy forum held at the CBN conference hall, Garki, Abuja, Nigeria.

World Trade Organisation (WTO) (2003), Uruguay Round Goods Schedules. http:// www.wto.org/english/tratop_e/goods_schedules_e.htm, Geneva, Switzerland. 1-4

Yinusa, D. O. (2008). Between dollarization and exchange rate volatility: Nigeria's portfolio diversification option. *Journal of Policy Modeling*, *30*, 811-826.

Yinusa, D. O., & Akinlo, A. E. (2008). Exchange rate volatility and the extent of currency substitution in Nigeria.*IndianEconomic Review, 32*(2), 161-181.

Data for Regression:

YEAR	EXCHR	GDP	OPEN	INFL	NOEXP	CPS
1980	0.5464	49632.3	0.44	9.9	0.5	7.4
1981	0.61	47619.66	0.47	20.9	0.3	9.67
1982	0.6729	49069.28	0.5	7.7	0.2	11.6
1983	0.7241	53107.38	0.39	23.2	0.3	12.2
1984	0.7649	59622.53	0.31	39.6	0.2	12.9
1985	0.8938	67908.55	1.64	5.5	0.5	13.070342
1986	2.0206	69146.99	0.28	5.4	0.6	15.24745
1987	4.0179	105222.84	0.22	10.2	2.2	21.082992
1988	4.5367	139085.3	0.46	38.3	2.8	27.326417
1989	7.3916	216797.54	0.38	40.9	3	30.403217
1990	8.0378	267549.99	0.41	7.5	3.3	33.5477
1991	9.9095	312139.74	0.58	13	4.7	41.352458
1992	17.2984	532613.83	0.68	44.5	4.2	58.122947
1993	22.0511	683869.79	0.65	57.2	5	127.11771
1994	21.8861	899863.22	0.56	57	5.3	143.42421
1995	21.8861	1933211.55	0.41	72.8	23.1	180.00476
1996	21.8861	2702719.13	0.88	44.6	23.3	238.59656
1997	21.8861	2801972.58	0.69	29.3	29.2	316.20708
1998	21.8861	2708430.86	0.74	8.5	34.1	351.95619
1999	92.6934	3194014.97	0.59	10	19.5	431.16836
2000	102.1052	4582127.29	0.64	6.6	24.8	530.3733
2001	111.9433	4725086	0.64	6.9	28	764.96152
2002	120.9702	6912381.25	0.68	16.5	94.7	930.49393
2003	129.3565	8487031.57	0.47	16.1	94.8	1096.5356
2004	133.5004	11411066.91	0.61	23.8	113.3	1421.664
2005	132.147	14572239.12	0.58	15.5	106	1838.3899
2006	128.6516	18564594.73	0.69	8.5	133.6	2290.6178
2007	125.8331	20657317.66	0.56	6.6	199.3	3680.0902
2008	118.5669	24296329.29	0.59	15.1	525.9	6941.3834
2009	148.9017	24794238.66	0.64	13.9	500.9	9147.4172
2010	150.298	29205782.96	0.55	11.8	711	10157.021
2011	153.8616	37543654.7	0.67	10.3	913.5	10660.072
2012	155.9803	40544099.94	0.68	12	879.3	14649.276
2013	158.4603	42396800	0.61	7.96	1130.2	15751.838
2014	160.9402	67152790	0.57	7.98	953.5	17129.684
2015	299.38	94144.96045	0.21	9.55	660.7	18675.467

2016	490	101489.4922	0.18	18.55	656.8	21082.72
2017	305.289 9	113711.6346	0.22	15.37	697.2	22092.04
2018	305.772	127762.5456	0.2	11.28	739.3	22521.93

Null Hypothesis: CPS has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		3.099340	1.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(CPS) has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.226915	0.0263
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: EXCHR has a unit root
Exogenous: Constant
Bandwidth: 5 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.482747	0.8837
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(EXCHR) has a unit root
Exogenous: Constant
Bandwidth: 16 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-8.744459	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	

	10% level	-2.610263

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: GDP has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.393306	0.1503
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(GDP) has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-8.007720	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: INFL has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.753437	0.0747
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(INFL) has a unit root
Exogenous: Constant
Bandwidth: 32 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-10.68399	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	

	10% level	-2.610263

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: NOEXP has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.613761	0.8557
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(NOEXP) has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.466434	0.0001
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: OPEN has a unit root
Exogenous: Constant
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.572703	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

VAR Lag Order Selection Criteria
Endogenous variables: NOEXP CPS EXCHR GDP INFL OPEN
Exogenous variables: C
Date: 03/30/20 Time: 17:49
Sample: 1980 2018
Included observations: 37

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1602.045	NA	2.26e+30	86.92133	87.18256	87.01343
1	-1460.194	230.0280	7.62e+27	81.19968	83.02829	81.84435
2	-1393.981	85.89808*	1.75e+27*	79.56654*	82.96253*	80.76379*

* 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

ARDL Cointegrating And Long Run Form
Dependent Variable: NOEXP
Selected Model: ARDL(1, 2, 0, 0, 0, 0)
Date: 03/30/20 Time: 17:51
Sample: 1980 2018
Included observations: 37

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPS)	0.030626	0.019151	1.599207	0.1210
D(CPS(-1))	0.052569	0.019284	2.726052	0.0109
D(EXCHR)	-0.290803	0.253114	-1.148903	0.2603
D(GDP)	0.000006	0.000002	4.035378	0.0004
D(INFL)	0.040701	0.782941	0.051984	0.9589
D(OPEN)	17.326414	54.955430	0.315281	0.7549
CointEq(-1)	-0.811185	0.163579	-4.958976	0.0000

Cointeq = NOEXP - (0.0337*CPS -0.3585*EXCHR + 0.0000*GDP + 0.0502
*INFL + 21.3594*OPEN -8.8837)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPS	0.033702	0.005528	6.096473	0.0000
EXCHR	-0.358492	0.300134	-1.194437	0.2423

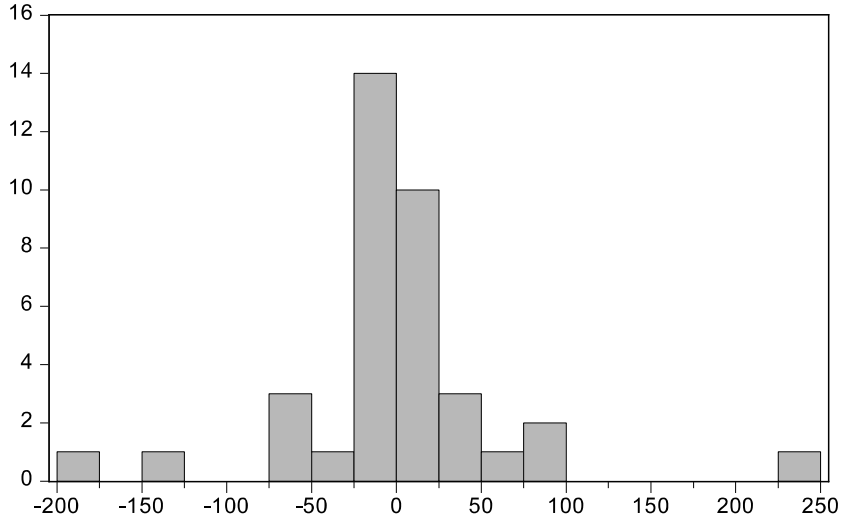
GDP	0.000008	0.000001	5.864970	0.0000
INFL	0.050174	0.965304	0.051978	0.9589
OPEN	21.359390	67.828543	0.314903	0.7552
C	-8.883698	54.896056	-0.161828	0.8726

ARDL Bounds Test
Date: 03/30/20 Time: 17:52
Sample: 1982 2018
Included observations: 37
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.935322	5

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68



Series: Residuals
Sample 1982 2018
Observations 37

Mean	8.57e-14
Median	-0.594044
Maximum	229.8283
Minimum	-181.8620
Std. Dev.	64.09583
Skewness	0.416320
Kurtosis	7.744469
Jarque-Bera	35.77172
Probability	0.000000

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.205894	Prob. F(2,26)	0.8152
Obs*R-squared	0.576870	Prob. Chi-Square(2)	0.7494

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	4.405013	Prob. F(8,28)	0.0015
Obs*R-squared	20.61799	Prob. Chi-Square(8)	0.0082
Scaled explained SS	39.81775	Prob. Chi-Square(8)	0.0000