

EFFECT OF TRADE OPENESS AND EXCHANGE RATE VARIATION ON ECONOMIC DIVERSIFICATION IN NIGERIA 1986-2020.

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This research work investigated the impact of trade openness and exchange rate variation on economic diversification in Nigerian economy from 1986-2020 using secondary data obtained from Central Bank of Nigeria statistical bulletin. In attempt to carry out effective research on the topic, trade openness, exchange rate and a control variable private domestic savings was regressed on non-oil export which was used as a proxy for economic diversification.. Autoregressive distributed lag model (ARDL) was used as the variables have different order of integration. The ARDL Bound test result indicated the presence of long-run relationship among the variables. The result of the short-run form revealed that trade openness has positive and significant impact on economic diversification while exchange rate variation has negative and significant effect on economic diversification. In the long-run trade openness has positive and insignificant effect on diversification while exchange rate has negative and insignificant effect on diversification. The result implies that raising the degree of trade openness by 1% will lead to 0.83% increase in economic diversification in the short-run and 0.82% increase in the long-run while a 1% increase in exchange rate will lead to 0.38 decrease in economic diversification in the short and 0.19 decrease in the long-run.. Based on the result the researcher recommends extensive implementation of trade openness policies so that the nation could benefit more from trading. Also the work from its findings recommends for policies that could stabilize the exchange rate.

Introduction

Export diversification has been a contentious issue in Nigeria since independence due to the lopsided nature of the export structure characterised by the dominance of oil export over the years. To reduce this dominance of oil through export diversification, the Nigerian government has over the years implemented various trade policies - export promotion strategy in 1981; trade liberalization policy in 1986; exchange rate liberalization in 1986; establishment

of the Nigerian Export-Import Bank (NEXIM) in 1991; and other bilateral and multilateral trade agreements. The implementations of the above trade policies were expected to enhance economic growth and diversify the export structure through improved market access to international trade as experienced by other emerging countries (see Martincus and Gomez, 2009; Ruhl, 2005). However, in spite of the initiated trade policies, the structure of the Nigerian export has remained dominated by oil export with

modest contributions from the non-oil export.

A huge revenue been accruing from oil wealth to Nigeria, as a nation but the country has continued to wallow in problem of external shock due to fluctuation in oil prices. Also, oil sector has not been able to provide stable growth for the economy as it has had a checkered growth trajectory as a result of vicissitudes of oil prices. The economy has equally been growing without job creation and poverty reduction due to inability of the sector to have a good link with other sectors of the economy (Onodugo 2013). As a result of the economic problems engendered by the overreliance on oil sector, the nation started shifting attention towards encouraging non-oil sector as a remedy. The non oil sector itself is facing some challenges especially as it concern the degree of trade openness, exchange rate fluctuations and even the oil sector impact.

Trade between nations has since been in existence and it seems to be as old as the rise of nation states. Inter- trade occurs due to inequality in the distribution of natural, human and capital resources across difference nations. Trade especially free trade provides the means through which nations expand their consumption of various rang of goods and

services which they cannot afford to produce. Nigeria considers trade as the engine of development as it is believed that it can help to create jobs, expand market frontier, raise income and facilitate competition and expand knowledge. Nwosa, Saibu and Fakunle (2012) contend that trade openness aids growth which in turn aids poverty alleviation though they argued that it should be set on sound basis.

Nigeria as a nation passed through the stage of high level of trade protection which started at independent in 1960 but changed to a higher level of trade openness with introduction of structural Adjustment Programme SAP in 1986. In 1986 government introduced Structural Adjustment Programme SAP following dictates of International Monetary Fund IMF and World Bank. Some of the core objectives include the restructuring of the production sector of the economy through diversification of the economy, opening up the economy through liberalization of trade and foreign exchange reforms. The change from trade protection to openness is meant to enhance economic diversification in Nigeria and spur economic growth. But some researchers still argue that trade openness has made the country a dumping ground for all kinds of foreign made goods at the expense of home made goods which seems to go against the attainment of

diversification policy objective..

Attempt to diversify the Nigerian economy by use of policies that could spur growth in non oil sector seems to be sluggish and quite discouraging even with introduction of structural adjustment programme. For instance, available data from 2019 CBN statistical bulletin indicates that non-oil export recorded a negative growth of -0.74 in 2004, -15.72 in 2012 and -24.41 decline in 2016. The challenge of the sector is not only that it is overshadowed by oil export but the management of exchange rate and low level of trade liberalization might have influenced the sector negatively. It is equally important to note that poor implementation of some macroeconomic policies might have also contributed a lot to the problems of non oil sector. The volatility in real exchange rate poses a threat in the activities in non-oil export since it raises the level of uncertainty over returns of a given investment. According to Chukwu (2017) potential investors will always chose to invest in foreign location only if the expected returns are high enough to cover for currency risk. It is equally suspected that trade openness policy contributed to the problem since it has made Nigeria a dumping ground for foreign made goods. This is attributed to the fact that most Nigerian prefers foreign made goods to locally produced ones.

According to IMF (2014), Amurgo-Pacheco and Pierola (2007), as well as Siope, Spence, Mevel and Karingi (2012) export diversification refers to the expansion of exports towards new products or new markets (extensive margin), as well as having a balanced mix of existing products (intensive margin). The two types of diversification as identified by Papageorgiou and Spatafora (2012) are; trade and domestic diversification. Trade diversification reflects diversity in the external sector, while the latter captures diversification in the domestic production process across sector. However, for this study, the emphasis is on the overall economy moving from mono-economy based on oil to non-oil based economy.

According to Kaulichi (2012) export diversification is seen as a necessary condition for insulating low income countries from external shocks which will enable them to have meaningful gains from external trade. Sannassee, Suetanah & Lamport (2014) saw it as a good strategy that will enable low income countries to record greater earnings from external trade for economic growth. According to Razazadehkaralari, Haghiri & Behrooznia (2011) exchange rate is the price which one country's currency exchanges for another country's currency. The increase or decrease of real exchange

rate shows the strength and weakness of a currency in relation to foreign currency and it is a standard for measuring the competitiveness of domestic industries in the world market. Aliyu (2011) noted that exchange rate appreciation results to increased import and reduced export while its depreciation would expand export and discourage import. Also depreciation of exchange rate tends to cause a shift from foreign goods to domestic goods. Ajayi as cited in Ismaila (2016) further argued that volatility implies deviation of the rate at a given time from its equilibrium

An exchange rate variation like oil earnings has some important effect on economic diversification effort in Nigeria. For instance, a stable exchange rate is a key factor in international trade as it can influence the amount of foreign reserves as well as the value of imports and exports (Lyndon & Ikechukwu 2019). One of the aspirations of every nation as far as their trade relations with other nations are concerned is achieving a stable exchange rate with other trading partners. In Nigeria the failure to have a stable exchange rate seems to be one of the contributing factors for the failure of most of her macroeconomic goals. Attaining most of her macroeconomic objective has remained an uphill task despite huge earnings from crude oil and exchange rate

instability.

Different scholars have conducted empirical studies on the impact of exchange rate changes on exports from a theoretical perspective. On the one hand, the first one of the leading arguments is that without a mechanism to mitigate exchange rate risks, volatility will cause a decline in the volume of trade. Exchange rate fluctuations will lead to greater uncertainty in transaction costs, triggering a decrease in the volume of trade Hooper & Kohihagen as cited in Duc, Anh & Zhaoyong (2018).

Rasaq (2012) empirically assessed the impact of exchange rate volatility on macroeconomic variables using ordinary least square method OLS. The result indicates that exchange rate volatility has a positive influence on gross domestic product GDP. In the same vein Dada and Oyerati (2012) empirically studied the influence of exchange rate on macroeconomic aggregates in Nigeria using a time series data from 1970-2009. The study used vector autoregressive model (VAR) analytical tool. The result did not show any evidence of strong relation between exchange rate and GDP.

Liu and Zhang (2015) conducted a cross-country study on the relationship between

export diversification and exchange rate regimes for a group of seventy-two countries for the period 1974 to 2010. The result of the study revealed that export diversification had a positive but insignificant effect on the choice of fixed exchange-rate regimes. Decomposing export diversification into extensive and intensive margins, the result of the study showed that, higher level of product diversification at the extensive margin has a statistically positive effect on exchange-rate regime choices while the intensive margin has a negative but insignificant impact on the choice. Shabana and Zafar (2014) in the same vein investigated the determinants of export diversification using panel data-set of selected ASEAN and SAARC member countries for the time period 1986 to 2012. The study employed the fully modified ordinary least squares (FMOL) and co-integration approach. The result of the study showed that domestic investment, foreign direct investment, financial sector development, competitiveness and institutional strength were positive-significant determinants of export diversification in the regions. The study recommended the need for the two selected regions (ASEAN and SAARC) to diversify their exports especially in their area of specialization which is vital for their economic development. Furthermore, the study encouraged the regional countries to improve their

international competitive strength.

Aditya and Acharyya (2015) investigated the relationship between trade liberalization and export diversification. Specifically, the study evaluated the implications of tariff reductions for diversification of export basket across and within industries measured in terms of larger sets of homogeneous goods and horizontally-differentiated varieties in two country world. The findings of the study indicates that unilateral tariff reduction may make the liberalizing country's exports diversified both across and within sectors whereas the trading partner may experience across-sector diversification. Under bilateral tariff reduction exports of larger number of differentiated varieties may be realized only for the country in where preference is given to the ratio of national wages moves.

Afaha & Njogo (2012) examined the impact of trade openness on the Nigerian economy using time series data from 1970-2010. The study utilized the ordinary least squares (OLS) technique the result that there is existence of a strong positive impact of trade openness on economic growth. In a related manner, Udegbumam (2002) studied the effect of trade openness on industrial output growth in Nigeria using a time series data

for the period 1970-1997. The result shows that trade openness is a major determinant of industrial output growth in Nigeria. Also, Bakare & Fawehinmi (2011) investigated the impact of trade openness on industrial output. Their result indicated that public domestic investment, savings rate, capacity utilization and infrastructure have negative impact on industrial output performance in Nigeria

However, Agosim, Alurezad & Bravo-Ortega (2011) investigated the determinants of export diversification across 79 countries. The study covered the period 1962-2000 using generalized method of moment (GMM) technique. The study revealed that trade openness and exchange rate volatility induced higher specialization while financial development and exchange rate overvaluation are having insignificant effect on export diversification and that increasing remittance s tends to reduce diversification.

Methodology

The Philip Peron (PP) unit root test has been employed as a diagnostic tool to test the variables of this study for order of integration. The ARDL Bounds test has also been employed to test for the existence of long-run equilibrium relationships between the variables of

both models, while Error Correction Model (ECM) under the Autoregressive Distributed Lags (ARDL) Model framework was employed to analyze the short run and long run dynamics of the model.

3.2.1 Model Specification

The implicit form of the model for this study which is adopted from the study of Sannasee as cited in Naomi & Michael (2019) is specified in mathematical form as;

$$NOR = f(TOP + EXR + PDI) \dots\dots\dots (1)$$

Where:

NOR = Non-oil Revenue

TOP = Degree of Trade Openness

EXR = Exchange Rates

PDI = private domestic investment

The natural logarithms of some of the variables in equation (1) were taken to enable uniformity of measurement. Specifying the ARDL model, the explicit form is given as;

$$\Delta \ln NOR = \beta_0 + \beta_1 \Delta \ln TOP_{t-i} + \beta_2 \Delta \ln EXDIV_{t-i} + \beta_3 \Delta \ln PDI + \mu_t \dots\dots\dots 2$$

Where:

$\beta_0, \beta_1, \beta_2$ and β_3 = coefficients;

Δ = denotes first difference;

\ln = natural log sign.

μ_t = the error term with the usual properties.

3.2.2 A priori Expectations

The a priori expectations are that all the $\beta_0, \beta_1, \beta_2$ and $\beta_3 > 0$. That is, lagged values Trade Openness and Exchange Rates, in the short run as well as estimated values of the same variables in the long run are expected to have positive effects

on Economic diversification which non-oil revenue is used as proxy (NOR).

Recommendation and Conclusion

The study examined the effect of trade openness and exchange variation on economic diversification policy outcome

RESULTS

4.0 Interpretation of results and discussion of findings

Table 1: Stationarity test results

The results of the Philip Peron unit root test is presented in Table I.

Variable	5%critical value	PP	PV	Remark
LNOE	-2.951126	-7.222118	0.0000	1(0)
LTOP	-2.951126	-4.820279	0.0004	1(0)
LEXR	-2.951126	-3.267601	0.0245	1(0)
LPDI	-2.951126	-1.845268	0.3531	
AT FIRST DIFFERENCE				
LPDI	-2.954021	-4.225016	0.0023	1(1)

Source: Authors computation from E-view 9.0

The Philip Peron unit root test result shows that the variables non-oil export, trade openness and exchange rate are stationery at levels while private domestic investment has unit root at level but stationery at first difference. The result implies that the variables are having different order of integration necessitating the application of autoregressive distributed lag (ARDL) model for further analysis

Table 2.Unrestricted ARDL Test Result

Variable	Coefficient	Statistics	Prob. Value
C	0.640591	0.8116675	0.4265
Lntop	0.834742	4.333073	0.0003
LEXR	-0.231971	-1.122524	0.2747
LPDI	0.274739	2.325602	0.0307
R-squared	0.9908		
F-statistic	215.7741		
Prob(F-statistic)	0.00000		
DW	2.38277		

Source; Authors Computation using E-view 9.0

The unrestricted ARDL test result shows that the coefficient of multiple regressions R-Square is 0.99 this implies that 99% of variation in non-oil export is accounted for by the explanatory variables. The F-statistic value is 215.7741 and its Prob(F-statistic) is 0.000000 indicating that the model is a good fit. The Durbin Watson (DW) value of 2.388277 indicates absence of first serial autocorrelation in the model.

Table 3; ARDL Bound Test Result
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	7.480560	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source; Authors computation from E-view 9.0

From the ARDL bound test result as presented in table 3 it can be observed that the calculated F-statistic value (7.480660) is greater than the tabulated upper bound value (4.89) at 5% level of significance. This implies that there is evidence of co integrating equation between the explained and the explanatory variables. It implies that there exist long-run equilibrium relationships between the variables.

Table 4

Cointegrating Short-run Form Result				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNOE(-1))	-0.444693	0.165779	-2.682437	0.0143
D(LNOE(-2))	-0.376024	0.176000	-2.136499	0.0452
D(LNOE(-3))	-0.249305	0.177003	-1.408475	0.1743
D(LTOP)	0.834742	0.192644	4.333073	0.0003
D(LEXR)	-0.231971	0.206651	-1.122524	0.2749
D(LEXR(-1))	-0.384925	0.162367	-2.370717	0.0279
D(LPDI)	0.274739	0.118137	2.325602	0.0307
ECM	-0.427273	0.153445	-2.784544	0.0114

$$\text{Cointeq} = \text{LNOE} - (0.8212 * \text{LTOP} - 0.1917 * \text{LEXR} + 0.6430 * \text{LPDI} + 1.4993)$$

Source; Authors computation from E-view 9.0

Table 4: Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTOP	0.821235	0.483894	1.697140	0.1052
LEXR	-0.191736	0.385681	-0.497136	0.6245
LPDI	0.643006	0.138020	4.658779	0.0002
C	1.499254	2.119883	0.707234	0.4876

Source; Authors computation from E-view 9.0

The value of the coefficient of lnTOP in the long-run is 0.821236 and its t-statistic value is 1.637140 and the P-value 0.1052. This implies that lnTOP has positive and insignificant impact on economic diversification in the long-run. It also indicates that a 1% increase in the degree of trade openness will lead to 0.82% increase in economic diversification in the long-run. On the other hand lnEXR has the coefficient -0.191736, t-statistic -0.497136 and the Pvalue 0.6245. It implies that exchange rate variation has a negative and insignificant impact on NOE in the long-run. It equally implies that a 1% rise in exchange rate will lead to 0.19% decrease in NOE in the long-run.

Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	0.099479	19	0.9218
F-statistic	0.009896	(1, 19)	0.9218

F-test summary

The estimated result indicated that t-statistic value is 0.099479, the F-statistic value is 0.009896, and the Probability values are 0.09218 and 0.09218 respectively. The estimated result therefore supports earlier claims that there is no specification error in the regression model at 5% level of significance. We therefore accept the null hypothesis and conclude that there is no specification error in the model.

in Nigeria from 1986 and 2020. The ARDL bound test was used to determine the existence of long-run relationship between the explained and the explanatory variables which the result indicated evidence of long run relation. The short-run and long run effect of trade openness on economic diversification was positive though not statistically significant in the long-run. However, exchange rate variation has negative effect on economic diversification in both the short-run and long-run and as well not

statistically significant in the long-run. This implies that open trade policy could spur growth in the short run in economic diversification in Nigeria and in the long-run. While, exchange rate variation leads to a decrease economic diversification in the short-run and in the long-run. Based on the result it is recommended that government at all level should intensify in implementation of trade liberalization policies. This will be done by reducing the levels of trade protection expect in a situation where it may constitute a

security threat. Also there is need for exchange rate stabilization policies to reducing the level exchange rate decrease in the country. In conclusion if the recommendations made based on the research result are implemented it will go a long way in mitigating the problems raised.

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APPENDICES

Data used in the analysis

YEAR	NOE	TOP	EXR	PDI
1986	5.07	9.14	1.79	15.25
1987	14.69	19.5	4.02	21.08
1988	17.64	16.94	4.52	27.33
1989	26.19	34.18	7.36	30.4
1990	39.64	30.92	8.04	33.55
1991	81.72	37.02	9.91	41.35
1992	123.59	38.23	17.3	58.12
1993	124.49	33.72	22.07	127.12
1994	120.44	23.06	22	143.42
1995	599.3	39.53	21.9	180
1996	400.45	40.26	21.88	238.6
1997	678.81	51.46	21.89	316.21
1998	661.56	39.28	21.89	351.96
1999	650.85	34.46	92.34	431.17
2000	764.2	49	101.7	530.37
2001	1121.07	49.68	111.23	764.96
2002	1150.99	40.04	120.58	930.49
2003	1681.31	49.33	129.22	1096.54
2004	1668.93	31.9	132.89	1421.66
2005	2003.5	33.06	131.27	1838.39
2006	2397.84	45.57	128.65	2290.62
2007	3143.73	39.34	125.81	3668.66
2008	4277.65	40.8	118.55	7899.14
2009	4411.91	36.06	148.9	9889.58
2010	6406.83	43.32	150.3	10518.17
2011	7952.27	53.28	153.86	9600.02
2012	6702.3	44.53	157.5	13293.64
2013	7010.05	31.05	157.31	14461.41
2014	8323.75	30.89	158.55	16753
2015	9350.84	21.45	192.44	18688.42
2016	7095.95	20.72	253.49	21025.24
2017	8189.39	26.55	305.79	22459.18
2018	9758.34	33	306.08	22646.33
2019	16914.4	34.02	308.04	25676.87
2020	16938.09	36.09	308.04	29051.61

CBN Statistical Bulletin, 2020