Impact of Exchange Rate Volatility on Export Performance in Nigeria Economy

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Abstract

This research reviewed the issue of fluctuating exchange rate and its impact on export performance. This study investigated empirically the impact of variables such as gross domestic product (GDP), exchange rate fluctuation (EXCt) and foreign direct investment on export performance (Xt) in Nigeria and was used for analyzing purpose. All data used were secondary data obtained from the Statistical Bulletin of Central Bank of Nigeria from 1982 -2015. Ordinary Least Square method was used to analyze the data and it was deduced that gross domestic product (GDP), exchange rate fluctuation (EXCt) and foreign direct investment have positive relationship to export performance (Xt) in Nigeria.

It was recommended that the government should encourage the export promotion strategies in order to maintain a surplus balance of trade.

Keywords

Exchange Rate Fluctuation, Export Performance and Gross Domestic Product

I. Introduction

Export performance is of paramount importance because it contributes to the economic development of nations by influencing the amount of foreign exchange reserves as well as the level of imports a country can afford. It enhances societal prosperity and help national industries to develop improve productivity and create new jobs (Lages and Montgomery, 2014). Exporting provides an opportunity for firms to become less dependent on the domestic market. By reaching new customers overseas, the firm may also explore economies of scale and achieve lower production costs while producing more efficiently. By export it means goods produced domestically and sold abroad. When goods are sold abroad, payment is made in the currency of the buyer; hence, there is a need for exchange of currency at a given rate (Stephen, 2017). Exchange rate is the price of units of currency of one country expressed in terms of units of currency of another. In other words, it represents the number of units of the currency of one country that can be exchanged for another. The Exchange rate is also seen as a measure of the value of the national currency against other countries, which reflects the economic situation of the country compared to other countries (Obadan, 1994). The exchange rate is therefore potentially an extremely sensitive price changes that occur rapidly, automatically and continuously (Stephen, 2017). It is therefore important to note that exchange rates of currencies are never constant for an indefinite period; it fluctuates in response to demand for and supply of foreign exchange in the foreign exchange market. In order to understand the effect of exchange rate changes on export trade, it is important to analyze how exchange rate fluctuations affect export performance. In other word, in an export-led growth country, a major concern will be to make its export sector open to external shocks, especially in regards to exchange rates volatility. With the Nigerian economy in a state of exchange rate fluctuation, especially with the fluctuations in the currency of her major trading partners, question arises as to whether trade can continue to be a reliable source of economic growth for Nigeria. This major problem which this study is designed to solve is whether the exchange rate has any bearing on export growth. The present contribution is expected to rekindle research interest in this direction for purpose of achieving greater stability and sustainability in foreign exchange management in Nigeria through internationally competitive productivity in Nigeria. It is hypothesized that there is no causal relationship between exchange rate (EXR) and export growth (EXP) in Nigeria Most of the empirical studies (e.g Abule et al, 2012, Yutaka, 2013) on this issue were conducted in the case of developed countries. Only few studies have been carried out to investigate the relationship for developing countries which might be due to the lack of sufficient time series data. Many of the previous works on the exchange rate have been on different sectors of the economy, except for the export sector. This study intends to fill this gap by empirically examine the effect of exchange rate volatility of the major trading partners of Nigeria on Nigeria's exports. In the case of Nigeria, there were few studies that have been conducted on the relationship between exports and exchange rate volatility. For instance, (Opaluwa, Umeh, and Ameh, 2010) examined the impact of exchange rate fluctuations on the Nigerian manufacturing sector during a twenty (20) year period (1986 – 2005). The argument was that fluctuations in exchange rate adversely affect output of the manufacturing sector. This is because Nigerian manufacturing is highly dependent on import of inputs and capital goods. These are paid for in foreign exchange whose rate of exchange is unstable. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs. The studies lacked the economic implications of depending on external source for its productive inputs. Thus, this study intends to add to the existing empirical studies on the relationship between exports and exchange rate volatility in Nigeria up to 2015. The scope is limited to 2015 because of the availability of data on recent publication of CBN Statistical Bulletin. The study is focused on the impacts of the unstable exchange rate of the naira on export performance. The rest of the paper is as follows: section two is the review of literature and the gaps the study intends to fill. Section three is the data analysis and interpretation of exchange rate volatility and export trade nexus while section four gives the conclusion and recommendations.

II. Review of Related Literature

A. Conceptual Review

Exchange rate is the price of one country's currency in relation to another country, which is a key variable for healthy economic management in every nation (Oloyede, 2002; Fapetu and Oloyede, 2014 cited in Stephen, 2017). Exchange rate is the price of the currency of one country expressed in terms of the currency of another. For example, the Nigeria Naira has exchange rate against the U.S. dollar and many other currencies. It may be expressed as nominal exchange rate or real exchange rate (Okorontah & Odoemena, 2016). e.g. Naira in relation to dollar (N/S), while the real exchange rate is a real concept that measures the relative price or value of different countries products.

An exchange rate system can also be fixed or allowed to fluctuate. A fixed exchange rate is a system in which a country's exchange rate remains constant or stays within some small margin of fluctuation around a constant par value. On the other hand, the floating exchange rate (which is our concern in this study) is an exchange rate system with no government or central bank action to keep it stable (Black 2003 cited in Okorontah & Odoemena, 2016).

1. Exchange Rate Regime in Nigeria

In Nigeria, exchange rate management has undergone significant changes over the past five decades. In the 1960s, Nigeria operated a fixed dollar in addition to restrictions on imports through strict administrative controls on foreign exchange. In 1978, the Nigerian monetary authorities pegged the naira to a basket of 12 currencies of her exchange rate regime fixed at par with the British pound and later the American major trading partners. The sharp fall in international oil price and consequent decline in foreign exchange receipts in the early 1980s were such that the economy could not meet its international financial commitments, and to mitigate the challenges, the stabilization act of 1982 was implemented which led to accelerated depreciation of the naira. Failure of the Stabilization Act to address the economic problems (unpaid trade bills and accumulation of payment arrears consequent on the sharp fall in oil price) led to the adoption of the Structural Adjustment Programme (SAP) in 1986, aimed amongst others at the realization of a viable and realistic exchange rate, through a flexible arrangement. The adoption of the flexible exchange rate regime produced a significant volatility and uncertainty in the exchange rate of the naira against US dollar (Owuru & Farayibi, 2016).

Owuru & Farayibi, (2016) reported that there was relative stability in the dynamics of exchange rate from 1970 to 1985 with the highest exchange rate value of 0.8938. By implication, less than one naira was exchanging for one US dollar. This period was characterized with the adoption of fixed exchange rate regime which has led to the observed stability. Right from 1971 and the breakdown of the Bretton Wood system, the Nigerian government jettison the British pound starling and the adoption of the US dollar as a reference currency for the purpose of determining the exchange rate of the Nigerian pound. In January 1973, the Nigeria pound was replaced with the naira as the domestic currency and its value in par with the US dollar was N0.65/US$. Furthermore, exchange rate of naira to US dollar was stable at #21.89/US$1 between 1994 and 1998. This pegging was consequent upon the fact that the CBN has introduced the Dutch Auction System to curb excessive demand in 1990 as Bureau de Change (BDCs) was observed to service small scale foreign exchange end-users only. These observed problems led the bank to move from the initial flexible or deregulated exchange rate system in 1992 to a fixed system in 1994 when the naira was pegged at N21.89/US$1 till 1998. After the democratic rule in 1999, there was a sporadic rise in the level of depreciation of the exchange rate when it jumped from #21.89 in 1998 to #92.69 in 1999. The currency subsequently depreciated from #92.69 in 1999 to #133.5 in 2004. The naira exchange rate appreciated against US dollar from #132.15/US$1 in 2005 to #118.57/US$1 in 2008. However, the trend changed with a reversed depreciation of the exchange rate of naira at #148.88 as against #118.57 in 2009. The peak of the period of global financial crises in 2009 till the recent episode of oil price volatility or shocks at the international oil market has contributed to the recent rise in the depreciation rate of naira against dollar.

Meanwhile, in the early weeks of Buhari regime, the average exchange rate at the official market depreciated by 0.51% to stand at #196.97/US$1 in July 2015 (Vanguard, May 26, 2016). By early 2016, Naira crashed to #400/USD1 and hit #535/US$1 in mid February until the introduction of a policy that enables overseas travelers of more than five hours to be having direct access to Business and Personal Travel allowance to a maximum of US$4000 through banks, this policy has brought the rate down to #420/ US$1.

In all, it can be observed critically that variations in the volatility of exchange rate occurred within the period under study in the various regimes adopted by the Nigerian government in the management of her foreign exchange rate.

2. Export Performance in Nigeria

Exportation of goods and services is required by any economy to enhance its revenue and usher in economic growth and development. It is therefore crucial for economic progress and this has informed the idea of export-led growth (Owuru & Farayibi, 2016). The performance of export is seen as catalysts for overall development and increases the earnings of the country thereby creating an avenue for growth by raising the national income of the country. One of the major macroeconomic objectives of an economy is to attain full employment and export stands as a driver to its achievement because higher demand for exports will require more production which will in turn lead to creation of more employment opportunities in the country. Export commodities in Nigeria can be classified into oil and non-oil exports. Prior to independence, agriculture was the major component of exports and contributed immensely to Nigerian export earnings. But the advent of crude oil production especially; the oil boom of 1970s brought with it attendant fundamental changes in the Nigerian economy such that attention was diverted only to the oil sector while the agricultural sector was neglected (Owuru & Farayibi, 2016).

Empirical analysis (Owuru & Farayibi, 2016) showed that in the recent times, there have been declines in the level of the contribution of exports to economic growth (measured by GDP). Therefore, in few years to come, if these trends continue, the economy of Nigeria will experience stunted growth if the mono-cultural emphasis on oil sector is not changed in favour of other non-oil sectors of the economy.

B. Empirical Review

Previous researchers carried out studies on the impact of exchange rate volatility on export performance. However different conclusions were made depending on the country, researched methodology and the type of data used.

Aliyu (2011) noted that appreciation of exchange rate results in increased imports and reduced export while depreciation would expand export and discourage import. Also, depreciation of exchange rate tends to cause a shift from foreign goods to domestic goods. Hence, it leads to diversion of income from importing countries to countries exporting through a shift in terms of trade, and this tends to have impact on the exporting and importing countries' economic balance of payment.

Hassanov and Samadova (2012) Study the impact of the real exchange rate on non-oil exports in Azerbaijan by applying Vector Error Correction Model. The results showed that appreciated real exchange rate is one of major factors that impede non-oil export growth.

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Ewetan and Okodua (2013) examined the applicability of the Export-Led Growth (ELG) hypothesis for Nigeria using annual secondary time series data on the country's exports and GDP growth from 1970-2010. The estimation results obtained from the co integration test and granger causality test within the framework of a VAR model did not support the Export-Led Growth hypothesis for Nigeria.

This was against the Zukarnain, (2013) that there is a relationship between export and exchange rate Volatility and significantly related with exchange rates volatility. It follows therefore that a performance of export trade in Nigeria lies in the volatility of real exchange rate in the country. The exchange rate is used to determine the level of output growth of the country export performance. Hence, the rate at which exchange fluctuates calls for a lot of attention.

Akinlo and Adejumo (2014) investigated the impact of exchange rate volatility on non-oil exports in Nigeria and found that exchange rate volatility has positive and significant effects on non-oil exports in the long run while the short run impact of the exchange rate volatility is statistically insignificant. The policy implication is that the exchange rate volatility is only effective in the long run but not in the short run in the Nigerian economy.

Wilson & Choga (2015) investigated the relationship between exchange rate volatility and export performance in South Africa. Using GARCH methods, Exports were regressed against real effective exchange rate, trade openness, and capacity utilisation. The result obtained showed that exchange rate volatility had a significantly negative effect of South African exports in the period 2000-2011.

Raghul and Hariharan (2015) investigated EXR volatility in Indian firms and documented a lengthy list of factors affecting EXR, but EXP was not featured. Similarly, recent contributions from other researchers such as Venkatraja (2015) and Venkatraja and Sriram (2015) have only Granger-tested FDI, capital formation and the GDP in Indian context, indicating that academic inquiry into the actual nexus between EXR and EXP may be a relatively new area of research.

Okorontah & Odoemena, (2016) investigated the effects of exchange rate fluctuation on economic growth of Nigeria. Using annual data for the period 1986-2012, the study employed the Ordinary Least Square (OLS) technique, the Johansson co-integration test and the Error Correction Mechanism (ECM) to examine the relationship between exchange rate and economic growth. The result suggests that there is no strong relationship between exchange rate and economic growth in Nigeria. It is therefore suggested that Nigeria improve its competitive capacity in the international market through export diversification

Stephen, (2017) investigated the effects of exchange rate fluctuation on economic growth of Nigeria. Using annual data for the period 1986-2012, the study employed the Ordinary Least Square (OLS) technique, the Johansson co-integration test and the Error Correction Mechanism (ECM) to examine the relationship between exchange rate and economic growth.

III. Research Design

The study employed secondary data, which was collected from Statistical Bulletin of the Central Bank of Nigeria. The data on export trade value, real exchange rate, GDP and FDI were extracted from CBN Statistical Bulletin, 2015 edition. These data were analyzed to examine the impact of the exchange rate fluctuation on export performance in the subsequent section. Model was formulated and analyzed with the use of linear regression method.

The model is specified below:

$$log\ X_t = \alpha 0 + \alpha_1 logGDP_t + \alpha 2 logEXCt + \alpha 3 log\ \mathrm{FDI}t + \quad (1)$$

Where, X_t is real export at the period; GDP_t is the gross domestic product FDIt is a measure of real foreign economic activity at the time EXCt represents the real exchange rate at the time.

This research work is designed to cover the period 1982-2015. The scope consist of the regulatory and deregulatory exchange rate period i.e. the fixed exchange rate and the floating exchange rate period.

IV. Data Analysis and Interpretation

This section provides in detail the analysis of data used in the study and the interpretation of the empirical results. It is a step by step analysis, beginning from the regression analysis to unit root test.

Table 1: Regression Result Dependent Variable: LOGXT
Method: Least Squares
Sample: 1982 – 2015
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP	0.186365	0.070744	2.634347	0.0138
EXCT	0.007816	0.002043	3.825968	0.0007
LOGFDI	1.156765	0.264920	4.366475	0.0002
C	-6.456028	2.242785	-2.878576	0.0077
R-squared	0.914806	Mean dependent var		5.801290
Adjusted R-squared	0.905340	S.D. dependent var		1.226966
S.E. of regression	0.377498	Akaike info criterion		1.009413
Sum squared resid	3.847634	Schwarz criterion		1.194443
Log likelihood	-11.64590	F-statistic		96.64158
Durbin-Watson stat	1.227539	Prob(F-statistic)		0.000000

Source: E-view (2017)

The above result depicts that GDP is positively related to export growth; a unit increase in GDP increases export performance by 0. 186365.

EXCT: An increase in real exchange rate increases export performance by 0.007816.

FDI: An increase in foreign direct invest will increase export performance by 1.156765.

The coefficient of multiple correlations R^2 (0.914) suggests a very strong relationship between the independent variables and dependent variable. The implication is that the export increases as independent variables increase.

The coefficient of multiple determinations R^2 adjusted (0.905) suggests that the independent variables significant explain the rate and level of change in the dependent. This means that the independent variables are jointly able to explain about 90.5% changes in the export performance in Nigeria.

Table 2: Economic Opinions, Interpretation/Apriori Criteria

Variable	Expected signs	Estimate	Remark
LOGGDP	+	a_1 >O	Conforms
EXCT	+	a_2>O	conforms
LOGFDI	+	a_3>O	Conforms

α 1 >0, α 2 >0 and α 3 >0

From the table above, all the independent variables conform to the expectation of the study. The increase in the level of all independent variables increases the performance of export in the economy.

The result shows that Gross Domestic Product (GDP), real exchange rate (EXCT) and foreign direct investment (FDI) have statistically significant influence on export performance at 5% level of significance.

The calculated t-statistic for exchange rate and foreign direct investment are greater than the critical value obtained from the Table 1 as depicted by the probability t-value and standard error. This implies that the impact of each variable on export growth is significantly not equal to zero. The t test was carried out in order to ascertain the significance of the parameters. Thus, exchange rate has significant influence on export performance in Nigeria within the period of the study. This supports Zukarnain, (2013) that there is a relationship between export and exchange rate Volatility and significantly related with exchange rates volatility. It follows therefore that a performance of export trade in Nigeria lies in the volatility of real exchange rate in the country. The exchange rate is used to determine the level of output growth of the country export performance. Hence, the rate at which exchange fluctuates calls for a lot of attention. The rate by which exchange rate fluctuates brings about uncertainty in the trade transaction, and also the rate of naira has been unleashed and continues to depreciate, which also have effect on export performance.

V. Conclusion and Recommendations

Having seen that exchange rate fluctuation have an impact on export performance. Thus, there is need to maintain a stable exchange rate. Hence with stable exchange rate, it will help to curtail inflation, maintain a favourable balance of trade, boost export of domestic commodities and above all, maintains steady growth of the economy.

Sequel to the finding of this study, the study specifically made the following policy recommendations to the maintenance of stable exchange rate.

To control exchange rate from fluctuating, these policies have to be adopted.

- The government should create incentive such as loans subsidy etc to small scale industries, thereby encouraging them to process domestic goods into processed goods that will help boost our export.
- The government should encourage the export promotion strategies in order to maintain a surplus balance of trade.
- An effective policy should be made based on the fiscal and monetary policies which should be aimed at achieving a realistic exchange rate for naira.

References

[1] Abule, M., Abdi, K. E.,"Evaluation of Effect of Exchange Rate Variability on Export of Ethiopia's Agricultural Product: Case of Oilseeds", Journal of Economics and Sustainable Development , III (11), pp. 42-52, 2012.

[2] Adebiyi, M.A, Dauda, R.O.S,"Trade Liberalization policy and Industrialization Growth performance in Nigeria: An Error Correction Mechanism Technique", being a paper presented at the 45th annual conference of the Nigerian economic Society, 24th to 26th August, Central Bank of Nigeria new building auditorium, Abuja, 2009.

[3] Akinlo, A. E., Adejumo, O.A,"The dynamics of money, output and prices in Nigeria", Paper Presented at the Central Bank of Nigeria 2007 Executive Policy Seminar. Balogun, Emmanuel (2007), Monetary policy and economic performance of West African Monetary Zone countries. MPRA Paper No. 3408, 2007.

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

[5] Ewetan, O.O., H. Okodua,"Econometric analysis of exports and economic growth in Nigeria", Journal of Business Management and Applied Economics, 2(3): pp. 1-14, 2013.

[6] Lages, Montgomery,"Micro finance banks in Nigeria: An Engine for Rural Transformation", West African Institute for Financial and Economic Management, Lagos Nigeria, 2004.

[7] Obandan, M.I,"Overview of Nigeria's Exchange rate Policy and Management", Lagos: C.B.N Publications, 2004.

[8] Okorontah, C. F., Odoemena, I. U.,"Effects of Exchange Rate Fluctuations on Economic Growth of Nigeria", International Journal of Innovative Finance and Economics Research 4(2), pp. 1-7, 2016.

[9] Oloyede, J.A.,"Principles of International Finance", Lagos: Forthright Educational Publishers, 2002.

[10] Owuru, J., Farayibi, A.,"Exchange Rate Trends and Export Performance in Nigeria: A Descriptive Approach", Munich Personal RePEc Archieve, 2016.

[11] Raghul, A., S.V. Hariharan,"Exchange rate volatility on foreign currency and performance management in various industries", Proceedings of the 4th International Conference on Emerging Trends in Finance and Accounting, pp. 1-10, 2015.

[12] Stephen, A. G.,"Econometric analysis of exhange rate and export performance in developing economy", Asian Economic and Financial Review, pp. 2305 - 2147, 2017.

[13] The Guardian (Editorial),"How much forex does Nigeria need?", The Guardian (Nigeria), 2016.

[14] Venkatraja, B., M. Sriram,"A causal nexus between FDI and economic growth of India: An empirical study", Contemporary research in management. Mysore, India: SDMIMD, 4:1 – 34, 2015.

[15] Venkatraja, B.,"A causality analysis on the empirical nexus between capital formation and economic growth: Evidence from India", Rajagiri Management Journal, 9(1): pp. 26-42, 2015.

[16] Wilson, C., Choga, I.,"Exchange Rate Volatility and Export Performance in South Africa: (2000-2014)", Handbook on Economics, Finance and Management Outlooks , 3, pp. 27-28, 2015.

[17] Yutaka, K.,"Effects of Exchange Rate Fluctuations and Financial Development on International Trade: Recent Experience", Int.J.Buss.Mgt.Eco.Res., 2013.

[18] Zukarnain, Z.,"The Relationship between Export and Exchange Rate Volatility: Empirical Evidence Based on the Trade between Malaysia and Its Major Trading Partners", Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB), 2013.