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NAIRA DEVALUATION AGAINST U.S. DOLLAR AND GROWTH OF EXPORTS IN NIGERIA, 1999-2022: GRANGER CAUSALITY EFFECT

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Abstract

The study examined the effect of naira devaluation in Nigeria on the country's exports for 1999-2022. Currency devaluation is a strategy adopted by countries to increase their exports and reduce imports. It serves to mitigate deficit balance of trade in a country as well as protect domestic industries. When a domestic currency is devalued, the country's exports become cheaper than those of its foreign counterparts hence, imports for such country become more expensive than the exports. Time series data for annual rate of exports, imports, official naira to US$ exchange rate and external debt stock of Nigeria are used in the study after ascertaining their stationarity using Augmented Dickey Fuller Unit Root test. This is to avoid spurious results and inferences that emanate from the use of non-stationary data in analysis. The Unit Root test shows all the time series as integrated at levels. This means that there is no long run relationship between the variables. Granger Causality test was used to unravel the causality effects of the variables. It is a statistical hypothesis test for determining whether one-time series is useful in forecasting another. The results show only one direction causality between the growth rate of Nigeria's debt stock and its imports which also is significant while its exchange rate to US$ does not have any causal effect on its exports and imports. Hence, the study recommends among others, that to reduce imports in Nigeria, the country should reduce its external debt stock.

Keywords: *Exchange rate, Exports, Imports, External Debt Stock*

Introduction

Countries can mitigate their Balance of Payment deficits by devaluing their currencies. The reason for currency devaluation is to make exports of the domestic economy cheaper than its imports. When exports are cheaper, it is assumed that the country's Balance of Payment will be in surplus. But going by the law of demand, the higher the demand for country's exports, the higher the price and the currency will appreciate in value. A favourable trade balance is expected to translate to increased national income which invariably will lessen the dependence on government borrowing

especially, externally. External borrowing in foreign country's currency makes debt servicing costlier in the era of exchange rate devaluation. It increases the debt burden of foreign currency denominated loan when priced in the domestic currency. Conversely, when imports of a country become expensive in relation to its exports, it is an encouragement for domestic industries to develop through the enhancement of the consumption of what they produce. When there is a boost of the domestic industries, there will be a rise in economic growth and possibly, economic development. Standard of living will rise as well as rate of real per capita income. Reverse is the case if the rate of a country's imports increases. When this happens, the resultant effect is trade deficit that often leads a country into borrowing to sustain the economy. When a country's imports are cheaper than the exports the demand for domestic currency falls. The value of the domestic currency depreciates and trade deficit and government's indebtedness will persist.

Foreign Trade (Q4 2023) reveals that the exchange rate of the Nigerian currency was relatively stable between 1960s – 1980. In 1983, with the fall in oil price and mismanagement of the oil revenue, the naira official exchange rate was about 72 kobo per US dollar. Even at that time, the domestic export and import rates were negative (-7.67% and -35.27% respectively). The continued fall in oil price and mismanagement of oil revenue in 1986 made the World Bank to call for the devaluation of the naira to N9 per US dollar. Even at that, country's export and import rates could not perform better than what it was in 1983. They were all negative and the growth rate of Nigeria external borrowing towered to 41.62 percent. In 1990, in spite the continued loss in value of naira to US dollar, the country's import rate (19.56 percent) exceeded the Nigeria's export growth rate (-4.45 percent) leading to increased balance of payment deficit and external borrowing rate of 65.41 percent. The abysmal performance of the Nigeria economy seemed to worsen in 1993 when in spite of reduction of naira exchange rate to N22.07 per US dollar, more goods and services were imported (20.84 percent) into the country and less exported (18.65 percent). This resulted to another balance of payment deficit that necessitated another batch of borrowing that topped the Nigeria's dependence on external debt to a whopping rate of 120.84 percent. An ugly performance indeed! Nevertheless, the ushering in of political freedom (democratic rule) from the military juntas in 1999 pegged the official exchange rate of naira downward to N92.34 per US dollar. This did not lead to immediate relief from the country's bondage to deficit balance of payment and the attendant effects. The lost in the value of naira became more pronounced during this rule as it increased from N101.70 in 2000 to N358.81 in 2020, N410.75 in 2021, N423 in 2022, N635.24 in 2023 yet, could not produce the needed change from deficit balance of payment to surplus. Instead, during most of these years, the rate of import was higher than that of export. During these years, in spite of the external debt relief for Nigeria and other African countries in 2005, the rate of borrowing started accumulating afresh from 17.88 percent in the same 2005 for Nigeria to a marginal low rate of 16.94 percent in 2020, 17.30 percent in 2021, and to 21.37 percent in 2022. Should this scenario form a guide for whether or not to devalue the naira?

Statement of the Problem

Devaluation of domestic currency makes import of goods and services to be expensive because it takes more units of the devalued currency to buy foreign currency needed for the importation. This rise in cost of imported goods affects the overall price level (inflation) in the domestic economy. Chronic national Current Account and Budget deficits and low real economic growth rate are effects of high rate of imports. Nigeria as a primary goods exporter depends on foreign economies for the importation of capital goods like machines thereby limiting the growth of the domestic

infant industries and making the goods produced (if any) to be expensive. Often, devaluation of domestic currency leads to "race to the bottom" where other countries may also devalue their own currencies (currency war) leading to inflation. Lost in the value of a domestic currency also increases debt burden. This is the case if the foreign loans are priced in the devalued domestic currency. In this case, the external debt becomes more difficult to service. It can lead to recession due to uncertainty it engenders in the international market. The bottom of the matter is that though domestic currency devaluation is said to increase exports and reduce imports, it does not often lead to the achievement of the intended benefits.

Objectives of the Study

The general objective of this study is to ascertain effect of the devaluation of naira on its performance in international market.

The specific objectives are:

1. To unravel the relationship between naira exchange rate to US$ and the domestic export growth rate.
2. To examine if there is association between import rate and export growth rate in Nigeria.
3. To assess the causality between export rate and external debt stock rate in Nigeria.

Research Questions

The study will resolve the questions:

1. What is the relationship between exchange rate of naira to US dollar and export growth rate in Nigeria?
2. How is the import rate in the era of naira devaluation associated with the export growth rate in Nigeria?
3. What is the nexus between external debt stock rate and export in Nigeria?

Research Hypotheses

HO_1: There is no significant relationship between naira exchange rate to US dollar and export rate in Nigeria.

HO_2: There is no significant relationship between import and exports growth rates in Nigeria.

HO_3: The rate of external debt stock in Nigeria is not significantly related to the exports growth rate of the country.

Significance of the Study

The results of the study will offer policy makers of the country the needed insight into the effects of the naira devaluation on both the import and export rates of Nigeria. It will form a guide to countries on how to enhance their balance of payment and reduce the dependence on external borrowing.

Scope of the Study

The content scope of the study is the association between naira exchange rate to US dollar and rate of exports in Nigeria. It is for the period 1999 – 2022. This period falls within the democratic period which promised to develop Nigeria and reduce the rate of dependence on other countries.

Literature Review

Currency exchange rate is defined as the rate at which a currency is exchanged for another currency. It is the relative price of one currency expressed in terms of another or group of

currencies (Frieden, Lake & Schultz, 2019). Exchange rate is important for export of goods and services as well as importation. The exports refer to goods and services that are produced in one country and purchased by the residents of another country (Kimberly, 2021). A country exports products in which it has the comparative or absolute advantage of producing. It imports those products that it does not have either the comparative or absolute advantage in the production. The reason behind this exchange is the fact that no country is self-sufficient. According to Tray (2021), imports are the goods and services bought by one country that were produced in another country. To the purchasing country, they are imports. The balance between a country's exports and imports has much to say about the economic wellbeing of that country. When the revenue from its exports exceeds its imports expenditure in a fiscal year, there is said to be balance of payment current account surplus. On the contrary, the excess of expenditure on imports over income from exports leads to balance of payment current account deficit. The overall balance of payment deficit is a trap for a domestic economy to borrow either internally or externally. External Debt or borrowing is the proportion of a country's contractual liabilities from foreign lenders such as commercial banks, governments, or international financial institutions (Will, 2023). External Debt Stock is the total external debt of a country at a particular period of time. Balance of Payment theory of exchange rate states that the exchange between two currencies is a function of the balance of payment of their respective countries. A country with trade surplus will have its currency appreciate while the one with trade deficit will have its currency depreciate and importation of goods and services leads a country to demand for foreign currency to the detriment of domestic currency (Miller, 2002).

In a study of the nexus between exchange rate, exports and economic growth with evidence from Asia, the Wald Test under Vector Error Correction Method results reveal a positive effect of currency devaluation on exports and a significant impact on economic growth Weiz, Fayyaz, Muhammad, Ilah, & Abdul, 2022). The results are almost the same as those of Muhammad and Usman (2005) in the study of real exchange rate, exports and imports movements using Trivariate analysis. The study discovered a high correlation between real exchange rate and exports as well as that between exchange rate and imports. Exports and imports were found to be significantly related when tariff is at its low level. On the association between external debt and exchange rate fluctuation, Okoh, Olowo, Hassan, Aderemi, Peter and Alejo (2021) using dynamic Ordinary Least Square alongside Granger Causality techniques unraveled an insignificant positive relationship exchange rate and the variables (external debt stock, external debt service, and foreign reserve). Study by Augustine (2019) corroborates the positive link between exchange rate depreciation and external borrowing and shows the link as significant. This study is innovative as it examines the causality effect of the naira exchange rate on the exports growth rate of Nigeria within the country's democratic period (1999-2022). No such study has been made of recent.

Research Methodology

Exploratory research design is used in the study to unravel the causality effect between the naira exchange rate against the US dollar and the Nigeria's exports. Other variables included in the study are the Nigeria's import rate and its external debt stock as a percentage of the country's gross national income. The study is modeled after that of Okoh, Olowo, Hassan, Aderemi, Peter and Alejo (2021) in the study of External Debt and Exchange rate fluctuations in Nigeria (1990-2017) in which external debt stock, external debt service and foreign reserve rates were the treatment variables for exchange rate. The variation between that study and this research work is the

elimination of autocorrelation problem that must have resulted among the external debt stock and external debt service that could render that study conclusions erroneous. In this study, export rate formed the treated variable while the treatment variables are naira exchange rate, import rate and debt stock rate. To eliminate such spurious results, the data were first subjected to Augmented Dickey Fuller unit root test. Granger Causality test was used to ascertain the causality effects of the variables. It is a statistical hypothesis test for determining whether one time series is useful in forecasting another. The relationship is specified as:

$exgr = a_0 + a_1 nexr + a_2 imgr + a_3 exdr + u$…….. (1)

Where:

exgr = export growth rate
nexr = naira official exchange rate
imgr = import growth rate
exdr = external debt stock as percentage of GNI
a_0 = intercept (constant) of the model
a_1, a_2, and a_3 = unknown coefficients of the model to be estimated
u = Stochastic error term.

It is a priori expected that the association between the naira official exchange rate and export rate in Nigeria be direct and significant while that between export and import and external debt stock rate be inverse. As exports increases due to the devaluation of naira, import is expected to decrease. External borrowing is also expected to reduce due to the expected Balance of Payment surplus that is likely to result from increase in exports at the expense of imports.

Data Presentation, Analysis and Interpretation of Results

The study used time series data for the period 1999 - 2022 sourced from the Index Mundi Data Bank (2024). Below are the results of the Augmented Dickey Fuller Unit Root Test:

Table 1: Results of the Augmented Dickey Fuller Unit Root Test:

Variables	t-statistic @ 1(0)	t-statistic @ 1(1)	Order of integration
EXDR	-4.918209		1(0)
EXGR	-6.804954		1(0)
IMGR	-4.115927		1(0)
NEXR	3.489619	-	1(0)
Test Critical Values:			
1%	-3.831511		
5%	-3.029970		
10%	-2.655194		

Source: Eviews version 9

Table 2: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests
Date: 02/13/24 Time: 20:53
Sample: 1 22
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
EXGR does not Granger Cause EXDR	19	0.11323	0.8938
EXDR does not Granger Cause EXGR		2.25430	0.1417
IMGR does not Granger Cause EXDR	19	1.33064	0.2958
EXDR does not Granger Cause IMGR***		4.13722	0.0387
NEXR does not Granger Cause EXDR	19	0.48123	0.6279
EXDR does not Granger Cause NEXR		0.44140	0.6518
IMGR does not Granger Cause EXGR	19	0.84109	0.4519
EXGR does not Granger Cause IMGR		0.48822	0.6238
NEXR does not Granger Cause EXGR	19	0.07557	0.9276
EXGR does not Granger Cause NEXR		1.29052	0.3059
NEXR does not Granger Cause IMGR	19	0.78705	0.4743
IMGR does not Granger Cause NEXR		0.19902	0.8218

Source: Eviews version 9

Major Findings

Table 1 shows the data for the dependent and independent variables to be stationary at levels. Therefore, the null hypotheses of no stationarity of the variables are rejected in favour of the alternative. However, the result is a pointer to no long run and possibly short run significant relationship between the dependent and independent variables. Consequently, there is no need for cointegration estimation. It became pertinent therefore to test for causality between the variables. Results in table 2 reveal no bidirectional causality among the variables. However, a unidirectional causality exists between external debt stock in Nigeria and imports.

Discussion of Major Findings

The unidirectional significant causality from external debt stock of Nigeria to growth rate of imports in the country calls for concern because it is a deviation from the balance of payment theory of exchange rate. This result indicates that even when the reason for naira devaluation is said to be increase in exports, the high rate of external borrowings by Nigeria is fuelling the growth rate of imports. For instance, in spite the fall in naira exchange rate in 2021, total exports from this country totalled US$46.93 billion while its imports totalled US$52 billion. The Nigerian External Debt Stock for the year rose from US$82.83 billion in 2020 to US$90.89 billion. The scenario was the same in 2022 when the total external debt stock was US$98.34 billion and total

imports amounted to US$60.35 billion while the exports totalled US$46.93 billion. The borrowing in the currency of the creditors leaves more money in the borrowing developing Nigeria thereby increasing its capacity to import more than it exports even with the naira devaluation.

Summary, Conclusion and Recommendation

The study is an analysis of how naira devaluation is associated with the growth rate of export from 1999-2022. Import growth rate and External debt stock rate were other treatment variables in the equation. Results of the granger causality test after Augmented Dickey Fuller Unit Root test of the time series variables show unidirectional causality from external debt stock of the country to import growth rate in spite the naira devaluation. This is taken to indicate that high external debt stock of a country in the era of currency devaluation, exacerbates the growth rate of its imports than achieve the objective of export maximization.

Recommendations

In line with the above findings, the study recommends that:

1. Government of Nigeria should desist from the floating of the naira exchange rate as it does not impact on its export rate significantly.
2. To reduce growth rate of import in Nigeria, the government should reduce the rate of borrowing from external creditors.

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