Foreign Exchange on the Performance of Nigeria Economy: An Econometric Approach

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ABSTRACT
The study empirically examined the effect of foreign exchange on the performance of the Nigeria economy. The specific objectives were to; examine the effect of money supply, inflation rate, trade openness on the performance of Nigeria economy. The study employed ex-post facto research. In line with the main focus of this study, secondary sources of data were used. Ordinary least square of multiple regression technique was adopted to establish the effect of independent on dependent variable. Based on the results, the findings showed that exchange rate, money supply, Inflation and trade openness (TO) had significant effect on the performance of the Nigerian economy, while exchange rate and money supply had a negative effect on the performance of Nigeria economy. The study concluded that exchange rate plays a key role in international economic transactions because no nation can remain in isolation. The study recommended thus: In order to address the negative impact of exchange rate on the economy, there is need forlocal sourcing of raw materials and input through agriculture and technological policy. By so doing, it will lead to expansion of export base which would attract more foreign exchange into the country. Furthermore, the monetary authority should introduce direct policies of regulating price stability in the economy via regulating money supply in order to decelerate the rising inflationary trend in the economy.

KEYWORDS: *Money supply, Inflation rate, trade openness, growth of Nigeria economy, RGDP*

INTRODUCTION

Exchange rate refers to the value of one currency (the domestic currency) in relation to another (foreign currency). It can also be defined as the price at which one unit of a country's domestic currency exchanges for any other country's currency in the world. Adebiyi (2012) posit that exchange rate plays a key role in international economic transactions because no nation can remain in isolation. Movements in the exchange rate have ripple effects on other economic variables such as interest rate, inflation rate, import, export, output, etc.

These facts underscore the importance of exchange rate to the economic well-being of every country that opens its doors to international trade in goods and services. The importance of exchange rate is derived from the fact that it connects the price systems of two different countries making it possible for international trade to make direct comparison of traded goods. In other words, it links domestic prices with international prices. Exchange rate exerts a powerful influence on a country's balance of payments position, through its effects on the volume of imports and exports.

The Naira exchange rate has witnessed some period of relative stability since the implementation of the Structural Adjustment Programme (SAP) in 1986, its continued depreciation, however, mars the economic performance of the country. According to Owolabi (2012), huge inflow of oil revenues in Nigeria are more often associated with expansion in the level of Government spending while periods of dwindling oil revenues are usuallyaccompanied by budget deficits. There is no gain saying that Nigeria relies so much on revenue from oil exports, but, it equally massively imports refined petroleum and other related products.

Exchange rate policies in developing countries are often sensitive and controversial, mainly because of the kind of structural transformation required, such as imports or expanding non-oil exports, which invariably imply a depreciation of the nominal exchange rate(Opaluwa, 2012). Many developing countries, gifted in natural resources like Nigeria heavily depend on international commodity prices which make their domestic economic activities tied to the vagaries of the commodities prices. Since it is generally recognized that commodity prices can be sources of macroeconomic instability in developing countries, the dependency of the Nigerian economy on oil resources glaringly insinuate the possibility of instability in the economy because of the fluctuation that may arise in the prices of such commodities in the international market (Mordi, 2006).

According to Oladpupo (2011), oil is an international trade commodity that attracts foreign exchange and isa quick source of capital accumulation. High revenues are realized from the wide differentials between unit production costs and economic rents, royalties, petroleum taxes, oil exports etc. In Nigeria, the management of the exchange rate is monitored by the central bank of Nigeria and following the adoptedstructural adjustment policy in 1986, the country has moved from a peg regime to a flexible exchange rate regime. In practice, no exchange rate is clean or pure float, that is, a situation where it is left completely to be determined by market forces but rather the prevailing system is the managed float whereby monetary authorities intervene periodically in the foreign exchange market in order to attain some strategic objectives (Ojebiyi 2011).

Exchange rate is the price of one country's currency expressed in terms of some other currency. It determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in the international trade. Exchange rate regime and interest rate remain important issues of discourse in international finance as well as in developing nations (Nnanna, 2013). Exchange rate stability is pivotal to the achievement of macroeconomic stability and the economic performance of any country in the global economy. Thus, exchange rate policy plays a significant role in determining an appropriate exchange rate and ensuring its stability (Mohammad, 2010). This study investigates foreign exchange effect on the growth of Nigeria economy. The specific objectives are;

1. To examine the effect of exchange rateon the growth of the Nigerian economy
2. To examine the effect of money supplyon the growth of Nigeria economy.
3. To ascertain the effect of inflation rate on the growth of Nigeria economy
4. To examine the effect of trade openness on the growth of Nigeria economy.

LITERATURE REVIEW

Theoretical Framework

There are certain theories of the determination of foreign exchange. These are;

Purchasing Power Parity (PPP) theory

This theory was postulated by Gustar Cassel in 1918. This theory attempts to explain the equilibrium value of the exchange rate in terms of inflationary differentials between two countries. The concept of purchasing power parity allows one to estimate what the exchange rate between four currencies would have to be in order for the exchange to be at per with the purchasing power of two countries' currencies.

Assuming further that all commodities are expectable, the equilibrium exchange rate can be expressed as the product of the terms of trade and relative general price.Purchasing power parity theory states that the equilibrium exchange rate between two inconvertible paper currencies, is determined by the equality of their purchasing powers. The rate of exchange is determined by their relative price levels. The implication is that with every change in the price level, the exchange rate also changes.

The purchasing power parity (PPP) theory attempts to explain the equilibrium value of the exchange rate in terms of inflationary differential between two countries. The theory assumes that exchange rates currencies of two countries move in a manner that seeks to offset the inflationary differentials between the economics thereby mantling the real purchasing power of either currency in the other economy.

Determinants of Exchange Rates

Aside from factors such as interest rates and inflation, the exchangerate is one of the most important determinants of a country's relative level of economic health. Exchange rates play a vital role in a country's level of trade, which is critical to almost every free market economy in the world. For this reason, exchange rates are among the most watchful, analyzed and governmentally manipulated economic measures. But exchange rates matter on a smaller scale as well: they impact the real return of an investor's portfolio. Numerous factors determine exchange rates, and all are related to the trading relationship between two countries.

Inflation

As a general rule, a country with a consistently lower inflation rate exhibits a rising currency value, as its purchasing power increases relative to other currencies. During the last half of the twentieth century, the countries with low inflation included Japan, Germany and Switzerland, while the U.S. and Canada achieved low inflation only later. Those countries with higher inflation typically see depreciation in their currency in relation to the currencies of their trading partners. This is also usually accompanied by higher interest rates.

Terms of Trade

Terms of trade is a ratio comparing export prices to import prices, the terms of trade is related to current accounts and the balance of payments. If the price of a country's exports rises by a greater rate than that of its imports, its terms of trade have favorably improved. Increasing terms of trade shows greater demand for the country's exports. This, in turn, results in rising revenues from exports, which provides increased demand for the country's currency (and an increase in the currency's value). If the price of exports rises by a smaller rate than that of its imports, the currency's value will decrease in relation to its trading partners.

Effect of foreign Exchange on the Economy

Exchange rate fluctuations are likely, in turn, to determine economic performance. In judging the desirability of exchange rate fluctuations, it becomes, therefore, necessary to evaluate their effects on output growth and price inflation. Demand and supply channels determine these effects(khan,2010). A depreciation of the domestic currency may stimulate economic activity through the initial increase in price of foreign goods relative to home goods. By increasing the international competitiveness of domestic industries, exchange rate depreciation diverts spending from foreign goods to domestic goods. The success of currency depreciation in promoting trade balance largely depends on switching demand in proper direction and amount, as well as on the capacity of the home economy to meet the additional demand by supplying more goods.

While the traditional view indicates that currency depreciation is expansionary, other theoretical developments have stressed some contra dictionary effects. Exchange rate policy involves choosing where foreign transaction will take place. It is a component of Macroeconomic management policies, the monetary authority in any given economy uses to achieve internal balance in medium run

Empirical Literature

Many studies were empirically reviewed on this study. Etta (2011) also reviewed twenty-four devaluation experiences involving nineteen different developing countries during the period 1959-1966. The study showed that exchange rate improved the trade balance of the devaluing country but that the economic activity often decreased in addition to an increase in inflation in the short term.

Aliyu (2011) analyzed the effect of exchange rates on output for twenty-eight developing countries that have devalued their currencies using a regression framework. After the introduction of controls for factors that could simultaneously induce devaluation and reduce output including terms of trade, and the fiscal balance, he discovered that depreciation of the level of the real exchange rate reduced the output.

It is important to mention the work of Asher (2012) who examined the linkage among exchange rate, inflation and output in Nigeria. A structural VAR model was employed which captured the interactions between exchange rate and output. Evidence from the contemporaneous models showed a contractionary impact of the parallel exchange rate on output only in the short term. Prices, parallel exchange rate and lending rate were found to be important sources of perturbations in the official exchange rate.

Azeez, kolopo and Ajayi(2012), empirically examined that the determination of short-term real exchange, has positive effect on exchange rate and broad money supply, while country risk and the expected rate of inflation have negative impact on exchange rate and the performance of banks. It follows therefore that the respective national authority would need to avoid fiscal indiscipline in order to prevent the exchange rate from real appreciation since it will significantly influence the country's export from declining.

Efffom, Ubi and Okon (2011) investigated the variables that affected exchange rate movement in Sweden, United Kingdom and Japan against the US dollar for the period 1995 to 2004. The result indicated that interest rate differential is statistically significant in explaining changes in exchange rate in the three countries, while interest rate has negative effect in exchange rate in Sweden and the United Kingdom. The empirical study revealed that

public sector fiscal deficits, growth of domestic credit, domestic consumption, GDP ratio, government consumption private consumption, improvement in terms of trade income per capita and black market exchange rate premium lead to real exchange rate appreciation. On the contrary, devaluation, investment –GDP ratio, consumer wholesale price ratio in trade and economic growth in industrialized economies, result in exchange rate depreciation. Ehinomen and Oladipo (2012) analyzed the main determinants of the real exchange rate in the Middle East and North Africa countries. The findings revealed that output per capital government expenditure, real interest rate differentials, and the degree of openness of the economy influence the real exchange rate. Enekwe, Ordu and Nwoha (2013), employed a co-integration technique to investigate the long-run determination of the real exchange rate for import and exports and of the internal real exchange rate in Zambia. The result showed that real exchange rate for import is affected by terms of trade and government share. Moreover, terms of trade, central bank reserves and trade taxes have long-run impact on the real exchange rate for exports. It was also revealed that terms of trade, investment share and rate of growth of real GDP have long run effect on the internal real exchange rate, while foreign aids and openness in dealings have short run effect on banking performance.

Owolabi (2012) examined the impact of exchange rate on the Nigeria economic growth for period 1980-2010. The result showed that real exchange rate has a positive effect on the economic growth. In a similar study, Etta (2011) investigated foreign exchange market and economic growth in an emerging petroleum based economy form 1970-2003 in Nigeria. He found that positive relationship exists between exchange rate and economic growth.

Opaluwa (2012) also examined the relationship between exchange rate and economic growth in Nigeria between 1970-2010. The result indicated that exchange rate has a strong impact on economic growth. He concluded that exchange rate was good to Nigeria economy as it promotes economic growth.

Ojebiyi (2011) also investigated the effect of exchange rate volatility on macroeconomic performance in Nigeria from 1986-2010. They discovered that exchange rate is positive related to Gross domestic product. Adebiyi(2012) using error correction model argued on the contrary that trade liberalization promoted growth in the Nigeria industrial sector and stabilized the exchange rate market between 1970 and 2006. To them, there was a positive and significant relationship between index of industrial production and real export.

Khan (2010) asserted 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 growth. In the same vein, Asher (2012) agreed that exchange rate helps to connect the price systems of two different countries by making it possible for international trade and also effects on the volume of imports and exports, as well as country's balance of payments position.

METHODOLOGY

The study employed ex-post factoresearch. It is a systematic inquiry in which the scientist

does not have control of independent variables because their manifestations have already occurred or because they are inherently not manipulated.In line with the main focus of this study,secondary sources of data are used. The techniques of unit root, co-integration, error correction model (ECM) and Granger Causality are employed to analyze the relationship between foreign exchange rate and performance of the Nigeria economy.The variables inflation, exchange rate, money supply and trade openness are determinants of RGDP.

$RGDP_t = \beta_o + \beta_1 EXR_t + \beta_2 M_{2t} + \beta_3 lnf_t + B_4 TOP_t + U_t$

Where

RGDP = current level of gross domestic product (a proxy for national output)

EXR = current exchange rate

INF = Inflation

MS = Current level of money supply

TO = trade openness

β_1, α_1 and θ_1 = parameters to be estimated and tested

β_o, α_o and θ_o = constants of the relationships to the u_1, u_2, u_3 = stochastic estimated error terms

ANALYSIS OF DATA

The regression of result of effect of foreign exchange on the performance of Nigeria economy

Regression result

Dependent Variable: RGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.884465	0.256868	15.12240	0.0000
EXR	-0.288245	0.109474	-2.632994	0.0149
MS	-0.005563	0.001454	-3.825258	0.0009
INF	0.025172	0.102796	0.244874	0.0087
TO	0.054453	0.014003	3.888763	0.0007
R-squared	0.773229	Mean dependent var		3.779028
Adjusted R-squared	0.714071	S.D. dependent var		0.225880
S.E. of regression	0.120784	Akaike info criterion		-1.188670
Sum squared resid	0.335539	Schwarz criterion		-0.861724
Log likelihood	24.83005	Hannan-Quinn criter.		-1.084077
F-statistic	13.07061	Durbin-Watson stat		1.317841
Prob(F-statistic)	0.000002			

Source: Researcher's computation from E-views

This is given by the high value of the R-squared of 0.7732 (77.32 per cent) and the adjusted R-squared of 0.7140 (71.40 per cent). The Adjusted R-squared, about 71 per cent of the systematic variations in the performance of the Nigerian economy has been explained by changes in exchange rate (EXCR), money supply (MS), Inflation rate (INF), trade openness (TO). In the same vein, the high value of F-statistics (13.0706) shows that the overall model is statistically significant. The overall significance of the short-run model implies the joint significance of all explanatory variables in explaining short-run changes in the performance of the Nigerian economy. Further examination of the result shows that there is no problem of autocorrelation in the model. This is so because the Durbin-Watson (DW) statistic value of 2.03 falls within the acceptable region of no autocorrelation. From the policy stance, this means that the finding of this study can be applied for policy purposes in the Nigerian

economy.

SUMMARY OF FINDINGS

The main thrust of this study was to assess the effect of foreign exchange on the performance of Nigeria economy. In order to achieve the objectives of this study,the summary of the findings showed that, exchange rate (EXR), money supply (MS), Inflation(INF) and trade openness (TO) have significant effect on the performance of the Nigerian economy, while exchange rate and money supply have a negative effect on the performance of Nigeria economy

CONCLUSION

This study was carried out to assess the effect of foreign exchange on the performance of Nigeria economy. From the results of the analyses and the findings obtained, it is firmly clear that, the chosen variables in this study (exchange rate, money supply, inflation, trade openness) captured in the model all had significant effects on the performance of the Nigerian economy. The results of our analyses revealed mixed findings, while some variables exhibited positive effect on the performance of the economy, some had a negative effect.

The study concludes that exchange rate plays a key role in international economic transactions because no nation can remain in isolation. Movements in the exchange rate have ripple effects on other economic variables such as interest rate, inflation rate, import, export, output, etc. Exchange rate exerts a powerful influence on a country's balance of payments position, through its effects on the volume of imports and exports. Exchange rate determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in the international trade.

RECOMMENDATIONS

In order to address the problem of exchange rate on the performance of Nigeria economy, the following recommendations will be useful:

1. In order to address the negative impact of exchange rate on the economy, the need for local sourcing of raw materials and input through agriculture and technological policy. By so doing, it will lead to expansion of export base which would attract more foreign exchange into the country.
2. The monetary authority should introduce direct policies of regulating price stability in the economy via regulating money supply in order to decelerate the rising inflationary trend in the economy.
3. It is pertinent that the devaluation of the nairain association with factors such as technology and human skills are necessary for the sector to be established in the export market.
4. Change in exchange rate management strategy (fixed or floating or market determined or guided floating regime) should be allowed to run a reasonable course of time.

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