Empirical Analysis of the Relationship Between Foreign Exchange Rate and Economic Growth in A Developing Economy: Nigerian Experience

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Abstract: This paper empirically analyzed the impact of foreign exchange rate on the growth of Nigerian economy. Time series data were obtained from the CBN publications on trends of GDP growth rate for the assessment for the periods 2000 to 2014. The GDP is used as dependent variable indicating economic growth of Nigeria. While independent variables like money supply, inflation rate, employment rate and foreign exchange rates were used as economic (performance) indicators. Multiple repression models were used to analyze the data in order to establish a functional relationship between the dependent variable and independent variables. The analysis was done with the use of Statistical Package for Social Sciences (SPSS). Our result revealed that there is variation on money supply and naira exchange rate; hence the monetary policy instruments were not efficacious in the attainment of price and exchange rate stability in Nigeria. Again, growths in money supply impact negatively on the economy as they breed inflation and there are significant relationships among \( M1 \), real exchange rate, unemployment rate and inflation rate. Therefore, the paper recommends among other things, that the monetary authorities should come up with workable macroeconomic policy that is capable of putting the economy back on a path of sustainable and non-inflationary position. This can be achieved by recognizing the importance of the linkage between the exchange rate and the growth of the economy.

Key words: Foreign Exchange Rate · Inflation · Money Supply · Unemployment · GDP

INTRODUCTION

Foreign exchange connotes the process of trading domestic currencies for foreign ones at varying exchange rates. In fact foreign exchange is the component that is widely used on daily basis for settlement of international transactions and international bills. The term exchange rate is a price of one currency to another. An exchange rate represents the number of units of a given currency of one country that can be exchanged for unit of another currency. \([1]\) referred to exchange rate as the rate at which a currency is exchanged for another currency. It is referred to as the ratio at which a unit of currency of one country is expressed in terms of another currency. \([2]\) defines exchange rate as the price of foreign currency over local one. For example, the exchange rate between the Nigerian Naira and the US Dollar is usually stated in dollars per naira \( (\$ / \text{₦}) \), an increase in exchange rate say from \( \text{₦}150 \) to \( \text{₦}200 \) per US$1 stills an appreciation of dollar against naira at \( \text{₦}50 \). The exchange rate between the Japanese Yen and the US Dollar is usually stated in yen per dollar \( (¥/¥) \); an increase in this exchange rate from, say, \( ¥120 \) to \( ¥128 \) is an indication of appreciation of dollar at \( ¥0.08 \) against Japanese Yen. In most cases in most countries, supply of and demands for foreign exchange determine the rate at which the currency should be sold or exchanged with another.

Suffice it to remark that about 90% of the foreign exchange trading involves the US Dollar on one side of the transaction or the other. This shows that the USD is used as a “vehicle currency” and this explains why its trading volume is so high. For example, someone wanting to go from the Malaysian ringgit to the South African rand passes through the dollar on the way. Also some
one that wants to go from Nigeria Naira to Chinese Yuan must pass through the USD on the way. Foreign exchange markets have been established to facilitate this process of converting the value of one currency into another in both emerging and developed world. They track the volumes of international foreign exchange capital flows and measure the impact on the growth of global economies. Both local and foreign traders including government officials all monitor the foreign exchange rate movement carefully to gauge the implications of particular currency values upon the world economy. Foreign exchange dealers always try to identify foreign exchange rate fluctuations before taking financial and investment decisions as foreign exchange is critical to transact international business. [3] refers to foreign exchange markets as the vast networks of private individuals, banks, institutions and organized exchanges that trade on currencies of various nations of the world.

As a matter of fact, the foreign exchange market is the most liquid financial market in the world. Traders include large banks, central banks, institutional investors, currency speculators, corporations, governments, retail investors and other financial institutions. The average daily turnover in the global foreign exchange and related markets is continuously growing. Foreign investors access the foreign exchange market to convert their local currencies for foreign banknotes which may be used to acquire foreign goods and settle overseas bills. In addition, they may enter the foreign exchange market to trade currencies at a profit by holding forex that appreciates in value against others. Government and corporate treasuries equally use the foreign exchange market to compile foreign exchange reserves to buy goods and convert international revenue back into domestic currency. Foreign exchange market network news disseminates quotes that may be analyzed to determine and fore-showcase the economic standing of a particular nation. This is because the state of foreign exchange of a nation determines the level of growth of her economy. Weak foreign exchange rates may be a signal of national economic instability or economic recession. Conversely, strong currency values are associated with economic stability and improved GDP.

Some researchers have worked on various aspects of foreign exchange rate in relation to Nigeria’s economy but no one to the best of my knowledge has determined the relationship between naira exchange rate and money supply and the impact of monetary policy instruments on price and exchange rate movement in Nigeria. Consequently, this study is designed to examine the relationship between the exchange rate movement and the GDP growth rate of the economy. It was hypothesized that there is no significant difference in the changes of foreign exchange movement to the overall growth of Nigeria’s economy; that strong currency values are not associated with economic strength and that foreign exchange rate has no significant relationship with interest rate and inflation rate in Nigeria. The a priori expectations of this are that the appreciation of naira exchange rate should have significant relationship with the growth of the Nigeria’s economy and weak foreign exchange rates is a signal of national recession or political instability. Such can be associated with ugly events like constant cues, insecurity, religious movement like Boko Haram sect, bombing, kidnapping and other evil vices. This paper therefore explores the effect of the foreign exchange on GDP growth rate of the Nigerian economy. The rest of this paper is organized as follows: section 2 reviews the literature; section 3 discusses the methodology; section 4 presents the findings and section 5 concludes the study with recommendations.

Theoretical Framework

Determination of Foreign Exchange Rate: There have been a lot of theoretical literatures in both financial and academic forays on the determination of the Foreign Exchange Rate. According to [4], the determination of a price of a currency is dependent upon the decision of central authorities’ monetary policies and sometimes by the forces of demand and supply. The decision can allow any of the followings: floating, fixing, Intermediating floating with fixing and managed floating.

Floating: Some countries “float” their exchange rate, which means that the central banks of such countries do not influence the prices of such currencies, or buy or sell foreign exchange and the price is instead determined in the exchange market by the forces of supply and demand of for foreign exchange.

Fixing: [5] in his study on “the Stabilization of the U.S. Economy: Evidence from the Stock Market”, asserted that some governments of countries instead of floating their currency rates fix their exchange rates at a specific point at least for some periods of time. This means that the government’s central bank of such a country is an active trader in the foreign exchange market. To do so, the central bank buys or sells foreign currency, depending on when it is necessary to peg the currency at a fixed exchange rate with the chosen foreign currency.
Intermediate Fixing and Floating: Some other countries still follow regime of intermediate between pure fixing and pure floating. Examples include bands or target zones, basket pegs, crawling pegs and adjustable pegs. Many central banks practice “managed floating,” whereby they intervene in the foreign exchange market by “leaning against the wind”. To do so, a central bank sells foreign exchange when the exchange rate is going up, thereby dampening its rise and buys when it is going down. The motive is to reduce the variability in the exchange rate. Private speculators may do the same thing such as “stabilizing speculation”. This means buying low with the plan of selling high, hence profit. Stabilizing speculation is profitable if only the speculators correctly anticipate the direction of future exchange rates. [6] posited that an increase in foreign exchange reserves will add to the money supply, which could lead to inflation if it is not offset by the monetary authorities via what are called “sterilization” operations. A sterilization operation by the central bank means responding to increases in reserves so as to leave the total money supply unchanged. A common way to accomplish it is by selling bonds on the open market and a lesser common way is to increase the reserve requirements placed on commercial banks by the regulatory authorities, CBN for Nigeria.

As already stated above, there are certain theories that explain the fluctuations in exchange rates in a floating exchange rate regime. In other words, there are always fluctuations in the exchange rates caused by the certain factors or theories. There are many theories of the determination of foreign exchange rate but we are going to discuss only six main ones in this paper. They include; the Mint Parity (MP) theory, the Purchasing Power Parity (PPP) theory, the Balance of Payment Parity (BPP) theory, the quantity theory of money, the Tightening Monetary Policy (TMP) theory and Covered Interest Parity (CIP) theory.

The Mint Parity (MP) Theory: The theory of Mint Parity is associated with the working of the international gold standard as noted by [7]. This happened to be the oldest theory propounded by Lewis Hammer in 1951. Under this system, considering the period 1955-1970, when exchange rates were “pegged” into gold under the Breton Woods System, the currency in use was made of gold or was convertible into gold at a fixed rate. In this case, the value of the currency unit was defined in terms of certain weight of gold and the central bank of the country concerned was always ready to buy and sell gold at the specified price. The rate at which such currency could be converted into gold is called the mint price of gold.

Quantity Theory of Money: This is one simplest model for determining the long-run equilibrium exchange rate which is based on the quantity theory of money. The domestic version of the quantity theory states that a one-time increase in the money supply is soon reflected as a proportionate increase in the domestic price level. The international version stipulates that the increase in the money supply is also reflected as a proportionate increase in the exchange rate. The exchange rate, as the relative price of money (domestic per foreign) can be viewed as determined by the demand for money (domestic relative to foreign), which is in turn influenced positively by the rate of growth of the real economy and negatively by the inflation rate. In other words the growth of the real economy impacts significantly on a nation’s currency position. In the same view, [8] noted that a defect of the international quantity theory of money is that it cannot account for fluctuations in the real exchange rate as opposed to simply the nominal exchange rate. The real exchange rate is defined as the nominal exchange rate deflated by price levels (foreign relative to domestic). It is the real exchange rate that matters most for the real economy. If a currency has a high value in real terms, this means that its products are selling at less competitive prices on world markets, which will tend to discourage exports and encourage imports.

Purchasing Power Parity Theory: This theory according to [9] recognizes inflation levels and trends as important determinants of exchange rate of a currency both in emerging and developed economies. The theory states that typically a currency will lose value if there is a high level of inflation in the country or if inflation levels are perceived to be rising. This is because inflation erodes purchasing power, thus demand, for that particular currency. However, a currency may sometimes strengthen when inflation rises because of expectations that the central bank of the country concerned will raise short-term interest rates to combat rising inflation. The theory concludes that the equilibrium exchange rate between two inconvertible paper currencies is determined by the equality of their purchasing power. In other words, the exchange rate between two countries is determined by their relative price levels, [10]. As a matter of fact, [11] faults this notion by stating that unless the real exchange rates were constant, then “purchasing power parity” would hold otherwise the exchange rate would not be proportionate to relative price levels. He posited that the purchasing power parity does not in effect hold in the short run, not even approximately, even for goods and
services that are traded internationally. But purchasing power parity according to [12] does tend to hold in the long run rather than in the short run.

The Balance of Payment Theory: This theory believes that the balance of payments deficit which focuses largely on tradable goods and services, ignore the increasing role of global capital flows when it comes to exchange rate determination. This theory stipulates that under free exchange rates, the exchange rate of the currency of a country depends upon its balance of payment position. In his own contribution, [13] posited that a favorable balance of payments raises the exchange rate, while an unfavorable balance of payments reduces the exchange rate. Thus the theory implies that the exchange rate is determined by the equilibrium in the balance of payment.

Tightening Monetary Policy Theory: This theory as propounded by [14] posits that an increase in the real interest rate due to a tightening monetary policy causes the currency to appreciate more in the short run than it will in the long run. This means that international investors will be willing to hold foreign assets, given that the rate of return on domestic assets is higher because of the monetary tightening, only if they expect the value of the domestic currency to fall in the future. This fall in the value of the domestic currency would make up for the lower rate of return on foreign assets. The only way the value of the domestic currency will fall in the future, given that the domestic currency’s value rises in the short run, is if it raises more in the short run than in the long run, thus, the term “overshooting”. Thus an advantage of this theory over the international quantity theory of money is that it can account for fluctuations in the real exchange rate.

Covered Interest Parity (CIP) Theory: The definition of “covered interest parity” is that the forward discount is equal to the differential in interest rates. This theory stipulates that even the poorer countries, despite a degree of market opening, still have substantial restrictions in the international movement of capital. In the absence of barriers to movement of financial capital across borders, capital is highly mobile and foreign exchange markets are highly integrated. In a situation like this, arbitrage is free to operate. Arbitrage operation occurs when investors buy assets in countries where they are cheap and sell them where they are expensive and thereby bring prices into line. Arbitrage works to bring interest rates into parity across countries. The surest form of arbitrage brings about “covered interest parity” as it drives the forward discount into equality with the differential in interest rates. However, [15] noted that covered interest arbitrage brings about covered interest parity in the absence of future change in the exchange rate. It is hard to measure whether this condition actually holds, because it is hard to measure investors’ private expectations. One of the reasons why uncovered interest parity could easily fail is the existence of an exchange-risk premium. If uncovered interest parity holds, then countries can finance unlimited deficits by borrowing abroad, so long as they are willing and able to pay the going world rate of return on investment.

Empirical Analysis: Empirical studies on the impact of both micro and macroeconomic variables on economic growth (GDP) abound, varying from country specific to cross country studies. For instance, [16] carried out an empirical analysis on Nigerian exchange rate reform and its inflationary consequences. His paper examined the impact of price response to exchange rate changes in Nigeria, using annual data from the period 1970 to 2003. His finding reveals that exchange rate policy reform is important in the determination of inflation in Nigeria and that money supply and exchange rate exerted stronger dynamic effects on inflation forecast errors than output level. In his own work [17] carried out an empirical evaluation of the impact of exchange rate on the Nigeria economy. The result shows that the two factors–exchange rate and inflation rate impact significantly on the Gross Domestic Product and economic growth of Nigeria. The study of [18] on “Exchange Rate Variation and Inflation in developing economies” found out that both exchange rate and inflation rate individually and jointly have significance impact on the economic growth of developing economies as represented by GDPs. The inflation rate has positive correlation with GDP while the exchange rates have negative correlations with the GDP. Still [19] and [20] presented detailed empirical reviews of some previous studies which have utilized VAR models like money supply, wages, exchange rate, income and prices to examine sources of inflationary shocks in Argentina, Brazil and Israel. Their results revealed that exchange rate movements among other factors significantly explained inflation and its effect on economic growth in the three countries.
Other studies of Rana, [21] (1983), [22] Kamin, 1996, Jung,[23] (1985) (1996), [24] Odedokun (1996), Engel [25], [26] Barungi, (1997), [27] Elbadawl (1990), [28] Gross and Schmitt (2000), [29] Phylaktis and Girardin (2001), Nnanna [30] (2002) and [31] Johnson, 2004, have reached similar conclusion. For instance, [32] Lu and Zhang (2003) carried out empirical study on China’s exchange rate policy reform and their finding revealed that in the short-run; changes in the devaluation rate are positively correlated with the increase in the inflation rate. Though, the study by [33] Kamas (1995) on Colombian economy which countered the positive exchange rate-inflation nexus revealed that exchange rates did not play an important role in explaining the variation in inflation of Colombia. His study equally found out that inflation in Colombia appeared to be primarily of inertia with respect to exchange rate but largely determined by demand shocks. [34] Kara and Nelson (2002) carried out a similar study on the economy of UK and found out that neither of the above extremes had justification in empiricism. Their findings were in total agreement with the result in the work of [35] Campa and Goldberg (2002) which reported a close and high correlation between exchange rate changes and rates of change in prices of products labeled as imported consumer goods. Equally, the findings in the empirical studies of Khan, [36] (1989) and [37] Younger, (1993) revealed that there is low correlation between domestic price (inflation) and nominal exchange rate changes, though, the correlation between ‘imported inflation’ and nominal exchange rate changes is however high. [38] Omotor (2008) in [39] Gabriele 2004 noted that in some other studies, the relationship between exchange rates and inflation has been investigated along the synthesis of monetarist and structuralism theories. According to him, the monetarists regard inflation as a purely monetary phenomenon caused and sustained by expansionary money supply. Whereas the structuralisms on the other hand argue that structural rigidities such as money supply, prices of goods, wage or exchange rate changes in developing economies create structural vulnerability. In support of this finding the works of Fitzpatrick and Nixson [40] (1976) and Hunan [41] (2009) maintained that though an increase in money supply is a necessary condition for the rise in the overall level of prices, it is not a sufficient condition. The empirical study of Gross and Schmitt (2000) found out that devaluations of currency exchange rate are associated with increase in inflation.

[42] Oriavwoten (2012) carried out empirical study on the Real Exchange Rate and Inflation in Nigeria in which the objective is to assess the relationship between the real exchange rate and inflation in Nigeria. His findings revealed that there exists long run relationship between the real exchange rate and inflation in Nigeria. In other words, the results showed that both domestic and imported inflation appreciate the real exchange rate of naira in the long run. This is an indicative that the real exchange rate in Nigeria has been susceptible to fluctuations in the rate of inflation. He therefore recommended among other things, that policy makers should not rely only on policies to stabilize real exchange rate by targeting inflation, but should employ domestic policies to increase export and production of previously imported inputs to reduce the problem of imported inflation. [43] Olabanjo Olatunde [44] Kamin, (2011) investigated the causes and implications of the changes in the foreign exchange rate on the performance of Nigerian economy. They used secondary data from the data base of CBN. The study employed Ordinary Least Square method of Multiple Regression Analysis to manipulate the time series data into Econometric model of inflation. The study’s findings suggest that inflation has a negative impact on the performance of Nigerian economy. [45] Danjuma, Shuaibu and Umar (2013) carried out another empirical study on the assessment of volatility and inflation in Nigeria. Their findings revealed that a negative shock exist between exchange rate and inflation, that is, a one percent increase in inflation rate leads to about 42 percent decrease in exchange rate. The empirical study of [46] Copelman on the Monetary Transmission Mechanism in Mexico found out that correlation relationship exists among money supply, inflation, unemployment and exchange rate. [47] Morris in his study on Inflation Dynamics and the Parallel Market for Foreign Exchange revealed that there is a significant positive relationship between economic growth and exchange rate mostly in the emerging economies.

**MATERIALS AND METHODS**

Data for the study were collected through secondary source from the various annual reports of the CBN. The study period covered 14 years from year 2000 to 2014. The study applied to the model GDP as the dependent variable indicating economic growth of Nigeria. While exchange rate, unemployment rate, money supply (M') and inflation rate are applied as the independent variables representing economic indicators affecting the economic growth (GDP) of Nigeria. The data were presented in Table 1 as thus:
Table 1: GDP at Current Base Price, Exchange Rate of Naira to 1$(EXR), Un-Employment Rate (UnEMPR), Money Supply (M') and Inflation Rate (IFR).

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>EXR</th>
<th>UnEMPR</th>
<th>M'</th>
<th>IFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>4582.127</td>
<td>102</td>
<td>13.61</td>
<td>1036079.50</td>
<td>6.90</td>
</tr>
<tr>
<td>2001</td>
<td>4725.086</td>
<td>111</td>
<td>14.05</td>
<td>1315869.10</td>
<td>8.90</td>
</tr>
<tr>
<td>2002</td>
<td>6912.381</td>
<td>120</td>
<td>14.08</td>
<td>1599494.60</td>
<td>12.00</td>
</tr>
<tr>
<td>2003</td>
<td>8487.032</td>
<td>129</td>
<td>14.00</td>
<td>1985191.80</td>
<td>14.00</td>
</tr>
<tr>
<td>2004</td>
<td>11411.067</td>
<td>133</td>
<td>15.80</td>
<td>2263587.90</td>
<td>15.00</td>
</tr>
<tr>
<td>2005</td>
<td>14572.239</td>
<td>132</td>
<td>12.80</td>
<td>2814846.10</td>
<td>13.30</td>
</tr>
<tr>
<td>2006</td>
<td>18564.595</td>
<td>128</td>
<td>11.90</td>
<td>4027901.70</td>
<td>8.50</td>
</tr>
<tr>
<td>2007</td>
<td>20657.318</td>
<td>125</td>
<td>14.12</td>
<td>5809826.50</td>
<td>4.50</td>
</tr>
<tr>
<td>2008</td>
<td>24296.329</td>
<td>118</td>
<td>11.90</td>
<td>6222110.21</td>
<td>12.00</td>
</tr>
<tr>
<td>2009</td>
<td>24794.239</td>
<td>148</td>
<td>15.70</td>
<td>7631412.96</td>
<td>12.00</td>
</tr>
<tr>
<td>2010</td>
<td>29205.783</td>
<td>150</td>
<td>20.50</td>
<td>8661642.43</td>
<td>24.00</td>
</tr>
<tr>
<td>2011</td>
<td>37543.650</td>
<td>153</td>
<td>21.10</td>
<td>8868172.33</td>
<td>4.90</td>
</tr>
<tr>
<td>2012</td>
<td>39893.558</td>
<td>157</td>
<td>24.90</td>
<td>8971180.66</td>
<td>4.00</td>
</tr>
<tr>
<td>2013</td>
<td>40211.242</td>
<td>185</td>
<td>26.00</td>
<td>9166835.30</td>
<td>4.00</td>
</tr>
<tr>
<td>2014</td>
<td>44261.324</td>
<td>195</td>
<td>26.82</td>
<td>10767377.80</td>
<td>4.21</td>
</tr>
</tbody>
</table>

Source: Centre Bank of Nigeria (CBN) Annual Reports (2000-2014)

Table 2 Instrumental Variable Regression Result Showing GDP as Dependent Variable

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. error</th>
<th>t-statistics</th>
<th>Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXR</td>
<td>-0.332223</td>
<td>0.111001</td>
<td>-1.422112</td>
<td>0.0005</td>
</tr>
<tr>
<td>UnEMPR</td>
<td>-0.212345</td>
<td>0.100200</td>
<td>-1.222523</td>
<td>0.0222</td>
</tr>
<tr>
<td>M'</td>
<td>-0.191102</td>
<td>0.004222</td>
<td>-5.334222</td>
<td>0.0000</td>
</tr>
<tr>
<td>IFR</td>
<td>6.223112</td>
<td>1.001110</td>
<td>6.123452</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-Squared (R²) = 0.8422
Mean Dependent Variable = 15632.520
Adjusted R-Squared = 0.974731
Sum Squared Residual = 204.6108
Schwarz Criterion = 22.16122
Log Likelihood = -212.30221
F-Statistic = 198.5644
Durbin-Watson Stat. = 1.142161
Prob(F-Statistic) = 0.0000

The above result can be represented in an equation form as seen in the work of Morgan (2010) thus: GDP = -0.332223 (EXR) - 0.212345 (UnEMPR) - 0.191102(M') + 6.223112 (IFR)

The table above displayed the moving of GDP at current Base Price and other economic indicators affecting the economic growth (GDP) of Nigeria between 2000 and 2014. The GDP keeps increasing every year notwithstanding the depreciation trend of naira to US dollar exchange rate. This is as a result of the demand of dollar as a widely used currency remaining so high throughout the whole world, hence the increase in exchange rate which ultimately results to high cost of both domestic and imported items (inflation).

Analysis of Data: Multiple regression models were used to analyze the data; this was to establish a functional relationship between the gross domestic product (GDP) in one hand and foreign exchange rate, employment rate, money supply and inflation rate on the other hand.

The model is stated thus:
GDP = f (EXR, EMPR, M', IFR)
Where: GDP = Gross Domestic Product
EXR = Exchange Rate
EMPR = Employment Rate
M' = Money supply
IFR = Inflation Rate

Explicitly, GDP = B_0 + B_1EXR + B_2EMPR + B_3M' + B_4IFR + U

where,
B_0, B_1, B_2, B_3, B_4 = Parameters to be estimated
U = error term

The computation is shown below Table 2.
RESULTS AND DISCUSSION

The above result showcased the relationship existing among the values of Gross Domestic Product (GDP), Exchange Rate of naira to dollar (EXR), Unemployment Rate (UnEMPR), the money supply (M1) and Inflation Rate (IFR) in Nigeria. In other words, the independent variables—EXR, unemployment rate, money supply and inflation rate—have significant impact on the dependent variable (GDP) of Nigeria. The result further revealed that there is a negative relationship between GDP and Exchange Rate movement in Nigeria, while a positive relationship exists between unemployment, money supply and Inflation and GDP respectively. Therefore, the result shows that an increase in the value of EXR by 1 percent brings about a decrease in GDP by 0.33 percent. Again, for every 1 percent increase in unemployment (UnEMPR), money supply (M1) and inflation rate (IFR), GDP increases by 0.21, 0.19 and 6.22 percent respectively. This is an indicative that improved GDP requires reduction on exchange rate (EXR) because the higher the exchange rate, the lower the importation of equipment and raw materials that can boast production which is prerequisite for GDP growth and vice versa. The high value of R-Squared (R²) which is (0.8422) shows that about 84% of the GDP was explained by the independent variables while the remaining 16% was explained by other variables outside our model.

Testing of Hypothesis

Re-stating the Hypothesis:

Hₙ: There is no significance relationship between exchange rate, unemployment, money supply, inflation on one hand and economic growth of Nigerian economy (GDP) on the other hand.

The F-ratio was used to test the overall significance of the model. The hypothesis tested is as follows:

From our analysis in Table 2 above, F-Statistic is calculated to be 198.5644 and F-table value is given as 6.12 at 5% level of significance. Therefore, since the F-Statistic value is greater than the F-table value, the Null hypothesis is rejected and alternate hypothesis is upheld. This implies that all the independent variables (exchange rate, unemployment rate, money supply and inflation rate) employed in this model relate significantly with dependent variable (GDP) which is economic growth of Nigeria. Therefore, the result is significant indicating that all the independent variables in this model are good and reliable indicators or measures of the performance of an economy. All these variables have significant impact on the economic growth of Nigeria.

CONCLUSION AND RECOMMENDATIONS

This study has been on the empirical analysis of the relationship between foreign exchange rate and economic growth in a developing economy using Nigeria as a case study. The study covered the period between 2000 and 2014. The simple regression models were used to analyze the data. The result revealed that there is significant positive relationship between exchange rate and economic growth of Nigerian economy. In other words, Nigerian economic growth is highly responsive to changes in the foreign exchange rate. A long run relationship was also found existing among foreign exchange rate, unemployment rate, money supply and inflation rate in Nigeria. Therefore, the paper recommends that the monetary authorities should come up with workable macroeconomic policy that is capable of putting the economy back on a path of sustainable growth and development. This can be achieved by recognizing the importance of the linkage between the exchange rate and the growth of the economy. To achieve this, the policy makers should not only rely on targeting inflation as one of the measures of stabilizing the exchange rate but should also adopt achievable macroeconomic policies that would increase domestic production, hence increased exports necessary for improved foreign exchange earnings. Furthermore, government should encourage the more the implementation of its economic reforms such as the national Economic Empowerment and development Strategy (NEEDS), Small and Medium Enterprises Equity Investment Scheme (SMEEIS), Public-Private-Partnership (PPP) etc. All these geared towards increasing productivity necessary for reducing high clamoring for imported goods as a measure to boost GDP growth rate. Moreover, there is need for the government to make the economy investment friendly by waging a serious war against terrorists and their dehumanizing activities. This is necessary as to safeguard lives and property and when this is achieved foreign investments would be massively be attracted into the country. This would also help reduce the unemployment rate and capital flight devouring the Nigerian economy. When all these suggested solutions are taken into consideration for implementation the economy would experience and record appraisable GDP growth rate.
Policy Implications: Generally, the more healthy and robust a country's economy, the better its currency will perform and the more demand for it there will be worldwide. Such growth can as well be showcased by the level of productivity of an economy. Increasing productivity in an economy should positively influence the value of its currency. Its effects are more prominent if the increase is in the traded sector. The current example is China; the Chinese YUAN is waxing stronger and stronger in the foreign exchange market because of increasing productivity recorded in China, unlike Nigerian naira that is lagging behind and is at the mercy of other currencies especially dollars, pounds and euro. Hence the policy objectives of this country should be re-formulated to be more or less agricultural and manufacturing-oriented. This will help to boost sufficiency in food supply and raw material needed for the production of goods necessary for improved exports, increased traded sector, reduction in inflation rate and unemployment rate. When all these and the more are in place, it will lead to buoyancy on the Gross Domestic Product (GDP) through the impact of favorable foreign exchange rate as the naira exchange rate would appreciate over other currencies, by so doing the economy will begin to record high GDP growth rate.

REFERENCES


