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**PERFORMANCE OF SELECTED CURRENCIES AT RETAINING THE
VALUE OF NIGERIAN ASSETS (1998 - 2014)****Abstract:**

This study obtained Exchange Rate of Nigerian Naira (ERN) to currencies of twenty-one countries selected from major economic blocs on quarterly basis between 1998 and 2014. Least Square method extracts ERN to United States Dollar (USD) as dependent variable. Comparing ERN to USD with other Foreign Exchange (FE) using Augmented Dickey-Fuller (ADF) test shows only Ghanaian Cedi (GHC) being stationary at levels while others were at first difference. Co-integration test exposes that ERN to USD has long term relationship with ERN to all FE tested. Granger causality test shows that ERN to USD caused changes in ERN to sixteen of the currencies while other currencies behaved otherwise. Conclusively, USD is the Vehicle Currency while EURO is the best currency to store Nigerian Assets for their parameters are positive and significant at 1%; co-integrated at 10%; and ERN to EUR unilaterally cause changes in ERN to USD. Nigerians are encouraged to deposit more in EURO, but convert their deposits to USD for foreign transactions. The study confirms some of the criticisms meted on the results of regression analysis of time series data but discovered that only OLS and Trend analysis can give specific answers and recommends their employment if specific answers are needed.

Keywords:

Assets, Currencies, Hard Currency, Trade Partners, and Vehicle Currency

JEL Classification: A10

1.0 INTRODUCTION

Transformation of raw materials into finished products makes man to consume and use the remnant to engage in either barter or monetary system of exchange to earn income with which he stores his excess products for future use as assets. Assets are kept for reproduction of other incomes and future consumption. Assets are stored in properties and/or currencies that are valuable to others. You cannot save money alone (Gugerty, 2005). Thus, Assets are held as capital goods, real estate properties, metallic form, securities, legal tender or convertible currencies [say: Nigerian Naira (NGN) and United States Dollar (USD)] at hand and/or deposited in bank accounts [Domestic Currency Accounts (Savings, Current, and Fixed Deposit Accounts) and Foreign Currency Accounts (Domiciliary Accounts)]. Domiciliary Accounts are opened for Hard Currencies like USD, GBP, EUR, and Gold.

Nigerians adopted barter system of exchange before the advent of foreign traders and British government used Royal Prerogative on British West African settlements to determine what was used as money, Ekundare (1973). Thus, British Pound was used as the means of exchange till 1973. Gold was another means of exchange but International Gold Standard does not exist again due to the depression of 1930s (Jhingan, 2004). The 1978 pegging of NGN to a Basket of Currencies of twelve of Nigerian major trading partners led to stable exchange rate (ER) of NGN but the economic crisis of 1981 made NGN to be over-valued against U.S Dollar, Nnanna (2002). Husted and Melvin (2013) says U.S economy dominated world economy since 1947 According to Oanda (2014) and Coinmill (2014) many independent nations name their local currencies after American currency, U.S Dollar. Among them are Australia, Bahaman, Barbados, Belize, Brunei, Canada, Cayman Island, Hong Kong, Fiji Island, Jamaica, Liberia, Namibia, New Taiwan, and Singapore. U.S Dollar is the Vehicle Currency according to Krugman, Obstfeld and Melitz (2013). Impliedly, USD is the most acceptable name of currencies in the world. It moves, determines and influences their ER.

According to Aristotle cited by Gusau (1992), self-interest and not communal-interest is the major incentive that makes people want to protect properties; and money serves as means of exchange and measure of value. This view is confirmed by the refusal of Nigerians to support the desire of Federal Government of Nigeria (FGN) to collect IMF

loan in 1986; and rejected the attempted introduction of five thousand naira note and the conversion of some naira notes of lower denomination to coins in 2012 as witnessed by the researchers.

Islam wants the assets of the lenders to be secured (Gatawa, 2007). Thus, Nigerian Muslims have the right and are duty bound to protect the properties of Nigeria. Keynes (1936) asserts that durable assets can possess attributes of money. Thus, securing the assets of Nigerians in valuable metals and/or any convertible and valuable currency is a religious and civil duty for all Nigerians. As such, for Islam permits search for knowledge. Nigerians need to know the best currency or metal that could store and/or invest their products, assets or wealth. This paved the way for the search for knowledge of the relationship between naira and the other currencies traded in at the Nigerian FEM in order to know which of them can alternate USD.

Following this was the research questions: What was the relationship between naira and other FE? To what extent was it possible for naira to influence other currencies? How should asset owners treat some currencies? Should FGN continue to dollarize majority of her Foreign Reserves?

As Sanusi (2014) observed, Prime Minister of Great Britain once said he wanted Britain to be the Headquarter of European Islamic Banking and Finance Institutions. He confirms that three major banks (Jaiz Bank; Stanbic and IBTC Bank; and Sterlings Bank) and a Microfinance Bank are now licensed to operate Interest-Free Banking in Nigeria. Islamic view concerning the origin of paper money according to Aliyu, Gatawa and Abdul-Yakeen (2013) is traced to the Qur'anic injunction (Qur'an chapter 2, verse 282) which enjoins the believers who engage in the transfer of trusts to document them and have witnesses. By implication, imitation of the ways and manners by which lenders and borrowers document their transfer of wealth in Islam was copied by the depositors of gold and acceptors of gold (Goldsmiths) who issued receipts used for exchange by the traders, and formalized by government as Notes and Coins that were and are now generally accepted as Legal Tender. Thus, all currencies were and are documents indicating legal transfer of valuable commodities and acceptable by Islam.

Mordi, Englama and Adebusuyi (2010), asserts that Pound Sterling was the prominent external reserve currency in the early 1960s and 1970s but USD took over since 1980s to-date. Nnaji, Chukwura and Ukwueze (2010) concludes that "Oil is unreplenishable asset and would be exhausted some day, this poses a very serious challenge on reserves management in Nigeria ... ". Thus, Nigerians need to know the capability of each and every currency at storing their assets.

The volume of export trade between Nigeria and other countries between 1995 and 2011 showed that United States, India, Brazil, Spain, France, Netherlands, South Africa, Germany, Italy and Portugal were the largest trading partner with Nigeria (Opendataforafrica, a; 2014). The volume of import trade between Nigeria and other countries between 1995 and 2011 shows that China, United States, Netherlands, France, United Kingdom, India, Brazil, Spain, Antigua Barbuda, Italy, Germany, and Belgium were the largest trading partner with Nigeria (Opendataforafrica, b; 2014). Impliedly, Nigerians do have negligible trade relations with the Asian Tigers. The same analysis goes for Nigerian neighboring countries both French West African Countries who spend CFA Franc (XOF) and French East African Countries that spend CFA franc (XAF). In 2013, Israeli Shekel had the best performance against USD while EURO had the best performance against USD for the past five years while JPY had the worst (Bloomberg, 2014). This kind of study has not been conducted against NGN.

Breakdown of external reserves of Nigeria indicates that 84.33% was in dollars, 5.91% in Euro, 5.87% in IMF SDRs, 1.94% in Renminbi, 1.88% in Pound Sterling and 0.07% in other currencies, CBN(2012). World currencies were Spanish Dollar (17th to 19th century), Gold Standard (19th to 20th century), while Pound Sterling up till 1944, US Dollar from 1944 till date, EURO from 1999, Yuan Renminbi are the reigning currencies in the current millennium while Petro-Currency was suggested to be the world currency by Hugo Chavez in 2009 (Wikipedia, 2014). The largest asset of Nigerians is kept in USD, why? For the fact that all rational Nigerians would not like to put their eggs in one basket, it is not out of point to look at the possibility of reducing the reserves being kept in USD and look for another viable currency with which Nigerians can increase their foreign reserve. Impliedly, Nigerians need to formulate appropriate monetary and fiscal policies to store the value of crude oil and other outputs, for the rainy days.

The objective of the study is to analyze the performance NGN against notable FE at FEM between 1998 and 2014 in order to know which of them performed the most desired functions (convertibility and stability of value) of money. The sub-objectives were to establish relationship between the changes in the value of USD and the selected internationally acceptable currencies; state the order of importance of key currencies, proffer suggestions and predict what could happen in the future if the suggestions are implemented.

Key Abbreviations and Acronyms are CBN, ER, ERN, EURO, FE, FEM, FGN, GHC, NGN, and USD which represents Central Bank of Nigeria, Exchange Rate, Exchange Rate of NGN to, European Euro Dollar, Foreign Exchange, Foreign Exchange Market, Federal Government of Nigeria, Ghanaian Cedi, Nigerian Naira, and United States Dollar respectively. Other acronyms are explained in Table 2.

The paper is divided into five sections. This section introduces the work. Section two reviews the relevant literature. Section three explains research methodology. Data analysis, interpretation and findings are in section four while section five contains the conclusion and recommendations.

2.0 LITERATURE REVIEW

Abeng, Oladunni and Adamu (2012) opines that the demand for money in the conduct of monetary policy started to gain ground after the Depression of 1930s and the Seminar work of Keynes(1936). Before 1958, when Central Bank of Nigeria was established and 1962 when Exchange Control Act was enacted, FE earned by Private sectors were kept in cash balances abroad (Cenbank, 2014). Invention of Domiciliary Accounts may reduce this act.

Krugman, Obsfeld & Melitz (2013) says the place where trading in international currencies take place is called foreign exchange market; the ER of USD to JPY fell between 1970 and 2000 from 358 to 80; actors in FEM are commercial banks, corporations, non-bank financial institutions and the Central Bank; London is the largest FEM in the world and other FEM are in New York, Tokyo, Frankfurt, and Singapore. However, they do not list other cities and reasons.

ER is important, for it influences cost of production; demand pattern; import and exports; government policy; leads to over-valuation of currency, discourages capital flow and affects external debt servicing (Investopedia, 2014). Keynesian Motives for holding money are: income, business, precautionary and speculative motive, Keynes (1936). The significant attribute of money is to link the present with the future and no one can discuss the effects of changing expectations on current activities except in monetary terms, Keynes (1936). By implication, holders of money would like to, at least, retain the present value of their output, if they cannot increase it, before the future comes.

Instability in ER is expressed by Obadan (1993) and Obadan (2010). Causes of depreciation in NGN are fundamental factors, Obadan (2010). Obadan (2002) asserts that both Retail Dutch Auction System (RDAS) and Wholesale Dutch Auction System (WDAS) were used exchangeably in the first decade of the current millennium in order to achieve the purposes desired by government. "International businessmen who have assets and liabilities in foreign currencies and want to avoid any risks associated with exchange rate fluctuation find hedging through forward contracts particularly useful" (Obadan, 2002 p. 58). He continued by saying that Hedging is the act of avoiding or covering a foreign exchange risk. However, he did not dwell on the best currency of retaining assets' value. Obadan (2002) used interest rate this researchers are using rate of growth of the values of currencies, for they are Muslim and Committed Muslims will always like to avoid the rate of interest for it is condemned by Islam.

We agree with the view of Olisadebe's (1991) view that foreign exchange shall be made available to the markets to lessen speculative fever. This is because of an Economic Slogan, 'Scarcity Creates Value. The study of Solarin and Sahu (2013) on the currencies of francophone neighbors [Eastern (XOF) and Western (XAF)] of Nigeria shows that these francophone currencies did not move in the same direction, FE could converge or diverge but does not say which of them shall be used to safe assets that are valuable to Nigerians.

The disequilibrium in the world financial market made the ER system with which the developing nations depended on the currencies of the developed nations, like U.S.A and U.K, which were highly sensitive to the fluctuations that bring extreme charges of interests and ER on the less developed nations, Aliero (2004). However, he does not

express the numerical strength of the disequilibrium but he suggests an improved corporate governance; adequate education and informing of Nigerians; governments' showing of commitment to budget discipline; supervisory authorities to provide dependable and reliable payment system; reassessing of financial environment; and adequate institutional and legal arrangements. However, his recommendations are made for the public sector only despite the fact that he concludes that financial instability could be micro, macro or international. Thus, a need arises to find solutions to the problems of financial instability on the private sector, for financial instability never respects any sector.

Imimole and Enoma (2011) found that exchange rate depreciation, money supply and real gross domestic product are the main determinants of inflation in Nigeria; and that depreciation of NGN depreciation is positive and has significant long-run effect on inflation in Nigeria. Bakare (2011) shows a significant but negative relationship between floating foreign exchange rate and private domestic investment in Nigeria. Their findings and conclusion support the need for the government to dump the floating exchange regime and adopt Purchasing Power Parity. Sanusi (2004) observes that an appropriate exchange rate will make local production competitive; also noted the failure of Nigerian domestic economy to create wealth and generate employment for our youths; suggested we reduce import dependency syndrome and export more. Then the right exchange rate is the one that facilitates optimal performance of Nigerian economy as a part of the new integrated global village and facilitate the attainment of the above objectives.

Objectives of monetary policies in monetary targeting era are exchange rate stability and Balance of Payment viability (Nnanna, 2002). National monetary policy of one country affects economic activity of other countries in the region negatively (Ekpo & Udo, 2012). Folawewo (2011) contends that there should be less intervention in FEM to reduce the speculative behavior of the arbitrageurs and the hedgers which may influence ER and consequently result to inflation. Also, scholars like Dickson and Andrew (2013); and Mamun, Chowdhury and Basher (2013) agree that fixed ER regime such as International Gold Standard, Bretton Wood Gold, and Dollar Standard are associated with persistent inflation. None of these writers discussed the particular effect of differences in ER of nations on private savings and national reserve.

ER policy in Nigeria has been consistently inconsistent, Njiforti and Aliyu (2011). They also confirm that all efforts of CBN at optimizing the value of NGN did not curtail the depreciation of NGN. Dickson and Andrew (2013) studied Exchange Rate Volatility (ERV) effect on trade variations in Nigeria and discovered that ERV was insignificant in explaining variations in imports but significant and positive with exports, and exports have positive and significant effects on imports. The study refuses to acknowledge the fact that a rational man would think that when output expands prices of goods or inflationary pressure would pipe low.

David, Umeh, & Ameh (2010) contends that ER fluctuations affect Manufacturing Sector. They did not find to what extent each of the foreign currencies affect the sector. This creates a case for the study of the impacts of selected FE on the assets of Nigerians. Folawewo and Adedokun (2012) found that the effect of real exchange rate on the manufacturing sector employment is faster than that of Agricultural and Service sectors. Therefore, they suggest proper management of the naira ER and well developed manufacturing sector. Their findings and suggestions are the most important things we need in Nigeria. However, they do not show which currency shall be well managed to sustain product values.

3.0 METHODOLOGY

The study evaluates the performance of naira against a basket of currencies of Nigerian trade partners from 1998 to 2014 by obtaining Time Series Data of quarterly averages on major foreign currencies traded in by Nigerians in order to meet the minimum fifty observations desired for the analysis of time series data by Chartfield (1996); and Davidson & Mackinnon (1993) in order to discover the best currency of saving assets' value. Also, there was no online data for EURO before this period. The Data was obtained from a website, (<http://www.oanda.com/search>), Oanda (2014) for the study. Using Ordinary Least Square (OLS) method, parameters of the variables were estimated as accepted by Gupta (2005), Gujarati & Sangeetha (2007) and Statsoft Website (2014).

This study adopts Multi-Point Arbitrage (more than three or many currencies) system. The currencies examined are those of major countries trading with Nigeria. This includes

the G7, BRICS as the developing nations and Switzerland due to the existence of the Headquarters of World Bank there. Ghana is included due to the proximity and political influence she shares with Nigeria. Due to the existence of European Monetary Union, currencies of some of G7 countries (France, Germany, Italy, Netherlands, Portugal and Spain) which have merged together as EURO are excluded despite the fact that they part of the largest trade partners with Nigeria. The Middle-East countries included are the Israel and Saudi Arabia where devoted Christians and Muslims do go to perform annual pilgrimage respectively. The researchers added XOF and XAF for they are witnesses to the fact that the countries spending these currencies are the major borders of Nigeria and a lot of unrecorded trade exist between Nigerians and people of these countries. HKD and SGD are also added to ensure that the currencies of the Asian Tigers are not left out of the study. The researchers also deemed it fit to incorporate three notable Metal Currencies such as Gold, Silver, and Platinum for there were times when nations used them as global currency and they are still valuable as store of values and means of exchange, today.

With the recommendation from Statsoft (2014), the data obtained was analyzed using E-View 7 Statistical Software. The maximum lag employed for the variables was one. The currency that had the highest positive relationship with the NGN but NGN did not influence its value is assumed to be the most durable asset to retain and trade the value of wealth of Nigerians while the one that had the highest negative relationship with the NGN caused its changes is the worst currency to save the assets of Nigerians. Box and Jenkins (1994) in ARIMA Models, assumes that Time Series Data are stationary. In order to know the stationarity and causal relationship between the Vehicle Currency and other Foreign Currencies, Unit Root and Granger Causality tests was conducted on the variables for they were less than thirty in number. However, owing to the fact that Unit root test, Co-integration test, Granger Causality test and VAR model do not make specific distinction between these variables in analysis and results, the researchers took a cursory look at trend analysis and compared it with the OLS Regression results and discovered that both OLS Regression and Trend Analysis are useful at making distinctive and specific results which other tests failed to make.

The study does not use the well accustomed Arabic Numerals as base of parameters (e.g. $\beta_0, \beta_1, \beta_2 \dots \beta_n$) but uses acronym of the variable (e.g. $\beta_{USD}, \beta_{EUR}, \beta_{GHC}$, etc) as base

for each and every nation has her own monetary policy as an independent policy of other nations whereas the betas in Keynesian Model of Income determination takes the Arabic Numerals for the addition of consumption, savings or investments, government expenditure and foreign transactions expenditures are what make the national income whereas aggregation of exchange rate of a currency to a basket of other currencies cannot make exchange rate of that currency to a single currency. Thus, the Model constructed for the study is regressive in nature. It goes as follows:

$$Y_t = \beta_0 + \sum_{i=1}^p \beta_i Y_{t-1} + \mu \dots\dots\dots(i)$$

Where Y_t is the vector of stationary endogenous variables representing the amount of money the surplus spending unit will be ready to deposit in the domiciliary accounts in time "t";

β_0 and β_t are the vector of constants and coefficients of the variables respectively;

Y_{t-1} is the value of vector of endogenous variables representing the amount of money the surplus spending unit of the economy deposited in a domiciliary account in the immediate past period;

and μ stands for the vector of white noise. It is independently and identically distributed with zero mean, i.e $E(u) = 0$ and $E(U_k, U_s) = 0$ for 'k≠s'.

Base on the equation one above and using Vector Autocorrelation Regression the following kinds of equation can be derived for each of the variables is:

$$\begin{aligned} X_{USD_t} = & \beta_0 + \sum_{i=1}^p \beta_{usd} X_{USD_{t-1}} + \sum_{i=1}^p \beta_{cad} X_{CAD_{t-1}} + \sum_{i=1}^p \beta_{chf} X_{CHF_{t-1}} + \\ & \sum_{i=1}^p \beta_{cny} X_{CNY_{t-1}} + \sum_{i=1}^p \beta_{eur} X_{EUR_{t-1}} + \sum_{i=1}^p \beta_{inr} X_{INR_{t-1}} + \sum_{i=1}^p \beta_{hkd} X_{HKD_{t-1}} - \\ & 1 + \mu \\ & \dots\dots\dots(ii) \end{aligned}$$

Thus, the current ER of a currency is a function of its immediate past ER and that of other FE.

This kind of equation can be derived for other currencies.

β_{CAD} , β_{EUR} , β_{CNY} , β_{CHF} , β_{INR} , β_{HKD} , and β_{USD} are the parameter or the differential value of Canadian Dollar, Euro Dollars, Chinese Yuan, Swiss Franc, Indian Rupees, Hong Kong Dollar and United States Dollar respectively.

XUSD, XCAD, XEUR, XCHF, XHKD, XINR means Exchange Rate of NGN to United States Dollar, Canadian Dollar, European Dollar, Swiss Franc, Hong Kong Dollar and Indian Rupee respectively.

The researchers calculated Regression Sum of Squares, R^2 or Coefficient of Determination to show the extent of variations in explanatory variables explained by the explained variable. Here, $0 < R^2 < 1$. Unit Root Test via Augmented Dickey Fuller, Dickey and Fuller(1979). Test was conducted to see if there was stationarity in the variables. Granger causality test is conducted to see which currency caused changes in another for despite the fact that Durbin Watson test-statistic is below 2.

4.0 DATA ANALYSIS, INTERPRETATION, FINDINGS AND DISCUSSION

4.1 Data Analysis and Interpretation

Table 1. Table of Data Analyzed via Ordinary Least Squares

Dependent Variable: NGN

Method: Least Squares

Date: 05/03/14 Time: 13:14

Sample: 1998Q4 2014Q1

Included observations: 62

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	730511.5	657.7800	1110.571	0.0000
ERN_BRL	-13.75542	4.692060	-2.931638	0.0056
ERN_CAD	34.34783	8.269115	4.153749	0.0002
ERN_CHF	13.97900	7.743710	1.805206	0.0786
ERN_CNY	211.4545	92.63666	2.282622	0.0278
ERN_EUR	46.73502	13.75955	3.396552	0.0016
ERN_GBP	1.756061	3.076409	0.570815	0.5713

ERN_GHC	-39424.60	7605.511	-5.183688	0.0000
ERN_HKD	1540.937	865.3543	1.780700	0.0826
ERN_ILS	-28.07012	22.74067	-1.234358	0.2243
ERN_INR	855.8351	311.5896	2.746674	0.0090
ERN_JPY	-963.9497	392.0769	-2.458573	0.0184
ERN_RUB	65.10617	126.8934	0.513078	0.6107
ERN_SAR	-4939.260	1345.436	-3.671123	0.0007
ERN_SGD	27.24593	17.32502	1.572634	0.1237
ERN_USD	1063.248	355.7403	2.988833	0.0048
ERN_XAF	4348.435	10045.35	0.432881	0.6674
ERN_XAG	-0.226512	0.091668	-2.470994	0.0178
ERN_XAU	0.002779	0.003562	0.780055	0.4399
ERN_XOF	-36570.34	11025.30	-3.316947	0.0019
ERN_XPT	-0.002131	0.001823	-1.168864	0.2494
ERN_ZAR	-52.48916	21.42307	-2.450123	0.0188

R-squared	0.995980	Mean dependent var	732537.4
Adjusted R-squared	0.993870	S.D. dependent var	1647.425
S.E. of regression	128.9842	Akaike info criterion	12.82868
Sum squared resid	665477.1	Schwarz criterion	13.58347
Log likelihood	-375.6891	Hannan-Quinn criter.	13.12503
F-statistic	471.9536	Durbin-Watson stat	1.439384
Prob(F-statistic)	0.000000		

Source: E-View 7 computation, 2014.

Employing the OLS method, the Regression Model of Analyzing data discovers a model of ER with positive intercept where fourteen of the currencies have significant relationship with naira seven of which are positive and seven of which have negative relationship with naira. They are BRL, CAD, CHF, CNY, EUR, GHC, HKD, INR, JPY, SGD, USD, XAG, XOF, and ZAR. Seven (CAD, CHF, CNY, EUR, HKD INR and USD) of them have positively parameters while seven (BRL, GHC, JPY, SAR, XAG, XOF and ZAR) are negative

parameters. At 1% significant level, USD has the highest positive parameter followed by INR, EUR and CAD but due to the fact that Deposit Money Banks do have facilities for Domiciliary Accounts in both USD and EUR the researchers opt for USD which comes first and third but do away with INR which comes second but have no Domiciliary Account in most of Nigerian banks. R-Square is almost one, F-statistic was significant at one percent and DW statistic is 1.262. This is shown in the table 1, above.

Based on the data analyzed above the researchers discovered the equation of relationship between naira price of dollar and naira price of other international monies as follows:

$$\text{ERN_USD}_t = 730511.5 + 1063.248\text{ERN_USD}_{t-1}$$

Std. Error	(657.7800)		(355.7403)
t-Statistic	1110.571		2.988833
R-squared =	0.995980	Prob(F-statistic) =	0.00000
Durbin-Watson stat =	1.439384		

This type of equation can be constructed for other variables.

From the equation stated above, positive intercept implies that there was NGN at the FEM even when there was no Foreign Currencies to be purchased. The meaning of the positive parameters is that the ER of those currencies appreciated against NGN. Negative relation denotes that ERN to that of those countries depreciated during the period studied.

Furthermore, R^2 is 0.996, This implies that the model is capable of explaining almost one hundred percent relationship between the ERN to the foreign currencies studied. High t-ratio and High R^2 have been criticized by many scholars, like Granger and Newbold (1974), for they (T-ratio and F-statistic) do not produce real situation of the event taking place within the economy. It also shows the calculated F-statistic with probability at (0.0000). Thus, the Null Hypothesis that says there is no significant difference between the changes in the ER of NGN to other FE is accepted at 1% significant level. Whatever the critics say, a regression result would show the direction of events and it is on that direction of events that researchers will base their interpretations.

To douse the tension on OLS method, Unit Root Test was conducted. Here, the researcher tested the existence of unit root between the variables.

4.2 Unit Root Test and Analysis

Table 2. Table of Unit Root Test conducted

Country	Currency (Variable)	Acronym of Variable	ADF At Level	ADF at 1 st Difference	Status
Brazil	Real	ERN_BRL	-1.311797	-8.459301*	I(1)
Canada	Canadian Dollar	ERN_CAD	-1.292702	-6.790718*	I(1)
Switzerland	Swiss Franc	ERN_CHF	0.150667	-6.283503*	I(1)
China	Yuan Renminbi	ERN_CNY	0.019901	-7.137005*	I(1)
European Countries	European Dollar	ERN_EUR	-0.688894	-6.789413*	I(1)
Great Britain	Pounds and Sterling	ERN_GBP	-1.491437	-6.200254*	I(1)
Ghana	Ghanaian Cedi	ERN_GHC	-3.952912*		I(0)
Hong Kong	Hong Kong Dollar	ERN_HKD	-1.591679	-0.350896*	I(1)
Israel	New Shekel	ERN_ILS	-1.095877	-8.341548*	I(1)
India	Indian Rupee	ERN_INR	-2.257021	-6.844788*	I(1)
Japan	Japanese Yen	ERN_JPY	-1.393795	-5.876008*	I(1)
Russia	Russian Rubble	ERN_RUB	-1.600303	-6.513542*	I(1)
Kingdom of Saudi Arabia	Saudi Riyal	ERN_SAR	-1.645758	-6.973943*	I(1)
Singapore	Singapore Dollar	ERN_SGD	-0.796767	-7.167139*	I(1)
United States of America	United States Dollar	ERN_USD	-1.644848	-6.971242*	I(1)
East African Francophone countries	East African Franc	ERN_XAF	-0.575703	-6.617779*	I(1)
All Nations of the World	Silver	ERN_XAG	-1.197241	-1.197241*	I(1)
All Nations of the World	Gold	ERN_XAU	-0.787345	-5.354166*	I(1)
West African Francophone countries	West African Franc	ERN_XOF	-0.671494	-6.828600*	I(1)
All Nations of the World	Platinum	ERN_XPT	-0.601559	-7.393564*	I(1)
South Africa	South African Rand	ERN_ZAR	-2.121516	-5.593544*	I(1)

Source: E-View 7 computation, 2014.

Notes:

- i. * denotes stationarity at one percent.
- ii. I(0) and I(1) means integrated of order zero and integrated of order one respectively.

From the above table, it is discovered that only GHC is stationary at all levels while other variables are stationary at first difference. INR follows USD in terms of high positive relation with NGN but it is not easy to open Domiciliary Account in it in Nigeria. Depositors can open Domiciliary Account in EURO that follows in INR in terms of positive relationship at 1% significant level.

Going by the result of the stationarity test, there is a need to verify if the variables co-integrate (if a long run relationship exist among the variables). The table below presents the cointegration result which tests the null hypothesis of no cointegration against the alternative that cointegration exist among variables. The variables considered are BRL,CAD, CHF, CNY, EUR, GBP, GHC, HKD, ILS, INR, JPY and USD.

4.3: Cointegration Result

Table 3. Table of Cointegration Result

Date: 07/25/14 Time: 09:15

Sample (adjusted): 1999Q3 2014Q1

Included observations: 59 after adjustments

Trend assumption: Linear deterministic trend

Series: BRL CAD CHF CNY EUR GBP GHC HKD ILS INR JPY USD

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**

None *	0.959416	826.1183	334.9837	0.0000
At most 1 *	0.907392	637.0599	285.1425	0.0000
At most 2 *	0.871542	496.6764	239.2354	0.0000
At most 3 *	0.777871	375.5992	197.3709	0.0000
At most 4 *	0.745871	286.8337	159.5297	0.0000
At most 5 *	0.597409	206.0089	125.6154	0.0000
At most 6 *	0.523868	152.3287	95.75366	0.0000
At most 7 *	0.494617	108.5472	69.81889	0.0000
At most 8 *	0.398644	68.28330	47.85613	0.0002
At most 9 *	0.295290	38.27774	29.79707	0.0042
At most 10 *	0.243949	17.62959	15.49471	0.0235
At most 11	0.018978	1.130471	3.841466	0.2877

Trace test indicates 11 cointegratingeqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.959416	189.0583	76.57843	0.0000
At most 1 *	0.907392	140.3836	70.53513	0.0000
At most 2 *	0.871542	121.0772	64.50472	0.0000
At most 3 *	0.777871	88.76545	58.43354	0.0000
At most 4 *	0.745871	80.82484	52.36261	0.0000
At most 5 *	0.597409	53.68023	46.23142	0.0068
At most 6 *	0.523868	43.78153	40.07757	0.0183
At most 7 *	0.494617	40.26385	33.87687	0.0076
At most 8 *	0.398644	30.00556	27.58434	0.0240
At most 9	0.295290	20.64815	21.13162	0.0583

At most 10 *	0.243949	16.49912	14.26460	0.0218
At most 11	0.018978	1.130471	3.841466	0.2877

Max-eigenvalue test indicates 9 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: E-View 7 computation, 2014.

From the table above it could be inferred that all variables exhibit joint similar behavior into the future. The long-run equilibrium relationship in the variables shown. It also shows similar trends in the variables. This implies there will be stable equilibrium in the FEM.

4.4 Pairwise Granger Causality Tests

Table 4. Summary of Results of Pairwise Granger Causality Tests

Null Hypothesis	F-Statistic	Probability	Decision	Direction of Decision
USD does not Granger Cause BRL	6.10759	0.0164	Accept	Unidirectionally
USD does not Granger Cause CAD	4.56097	0.0369	Accept	Unidirectionally
USD does not Granger Cause CHF	1.89104	0.1744	Reject	Bidirectionally
USD does not Granger Cause CNY	8.28906	0.0056	Accept	Bidirectionally
USD does not Granger Cause EUR	2.80932	0.0991	Accept	Unidirectionally
USD does not Granger Cause GBP	8.48824	0.0051	Accept	Bidirectionally
USD does not Granger Cause GHC	0.11954	0.7308	Reject	Bidirectionally
USD does not Granger Cause HKD	0.75717	0.3878	Reject	Bidirectionally
USD does not Granger Cause ILS	0.27611	0.6013	Reject	Unidirectionally
USD does not Granger Cause INR	0.14507	0.7047	Reject	Unidirectionally
USD does not Granger Cause JPY	1.27569	0.2634	Reject	Bidirectionally
USD does not Granger Cause	0.13148	0.7182	Reject	Unidirectionally

NGN				
USD does not Granger Cause RUB	20.8393	3.E-05	Reject	Bidirectionally
USD does not Granger Cause SAR	7.44617	0.0084	Accept	Unidirectionally
USD does not Granger Cause SGD	0.00389	0.9505	Reject	Bidirectionally
USD does not Granger Cause XAF	2.82567	0.0981	Accept	Unidirectionally
USD does not Granger Cause XAG	2.41918	0.1253	Reject	Unidirectionally
USD does not Granger Cause XAU	0.87623	0.3531	Reject	Bidirectionally
USD does not Granger Cause XOF	3.03508	0.0868	Accept	Unidirectionally
USD does not Granger Cause XPT	5.54630	0.0219	Accept	Unidirectionally
USD does not Granger Cause ZAR	1.37842	0.2452	Reject	Unidirectionally

Source: E-View 7 computation, 2014.

The above table shows that the currencies had all possible directional relationship or some of them granger-caused changes in ERN to USD and ERN to USD also Granger caused changes in some of them. Specifically, ERN to USD Granger caused changes in ERN to EURO but EURO does not Granger cause changes in USD at 10% significant level.

4.5 Findings and Discussion

The findings and discussion of this study are:

- i. The currency with highest positive relation to NGN is USD (Significant at 1%). Thus, USD is the best currency to keep the Nigerian Assets. USD is followed by EURO.
- ii. The currency with highest negative relation to NGN is GHC (Significant at 1%). There was a great difference between the performance of NGN and GHC at FEM. Only the Ghanaian currency, Cedi (GHC) was stationary at levels while other currencies were stationary at first difference. Thus, GHC is the least currency to keep Nigerian assets for its value is always depreciating against naira.

- iii.** Fourteen of the currencies had significant relationship with naira where seven of them had positive relationship the other seven had negative relationship with naira. ER of NGN to USD compared with ERN to other FE moved in three different directions. That is to say, the fact that ER of NGN to USD was falling does not mean that ER of NGN to other FE was also falling. The three directions of movement were positive, constant and negative in nature. Thus, the Nigerian economy was not developing when compared to United States and European Countries' economy since her ER was always decreasing but the economy was actually stagnant or developing when compared to other economies.
- iv.** The value of a nation's currency is based on the volume of trade she engaged in with another. This is shown by the fact the United States, European countries and India that have high volume of trade with Nigeria also have their currencies having positive parameters, significant at 1% and have long term equilibrium with the NGN. Njiforti & Aliyu (2011) called for the reduction of excess demand for FE. This is not possible, for the value of FE depends on the volume of trade between countries. Thus, when people are sure that the value of their domestic currency would always fall against another it will not be easy for government to reduce excess demand for that currency. This is not possible for no demand is made for the sake of nothing and the demand for the FE in Nigeria is based on the quantum of commodities people want to buy from other countries or trade with foreign trade partners.
- v.** ERN to USD could not cause changes in ERN to all other currencies and vice versa. This means that ERN to USD had influence on some FE and did not have influence on some FE. Thus, no currency has absolute control of all currencies.
- vi.** XAF and XOF moved in the same direction. This finding nullifies the fact that the study of Solarin and Sahu(2013) that says they move in the different directions.
- vii.** The need for the use of algebraical bases is also discovered for Time Series and Panel Data Analysis.

- viii. The result of the data confirms the postulations of Granger and Newbold(1974) that say that the result of Time Series Data may be '*spurious*'. Spurious in the sense that there could be high rate of regression sum of squares, t-ratio and f-ratio that may not be useful for policy making. In addition, it validates the assumption of Dickey and Fuller (1979) which says time series data may not be stationary at levels and that most of them are stationary at first difference. However, the OLS result of this study conforms with the level of trade with Nigeria as reported by (Opendataforafrica, a; 2014), (Opendataforafrica, b; 2014) and Bloomberg Website.
- ix. It confirms the discovery of Aliero (2004) that says currency of LDCs are dependent on those of DCs.
- x. It exposes the reason why CBN keeps over 84% of National Reserves in USD, about 6% each in Euro and IMF SDR and the rest in other currencies. Thus, Central Bank of Nigeria is vindicated.
- xi. It proves the assertion of Long Run relationship put forward by Imimole and Enoma (2011) to be true.

5.0 CONCLUSION AND RECOMMENDATIONS

NGN fell persistently against USD which had the best performance in the period studied. Thus, it is recommended that well-to-do and well-informed Nigerians shall open domiciliary accounts and increase investment in it and EURO which follows it. Dollarization is expected to be reduced to get back the value NGN. The problem that may arise here is that United State of America may be aggrieved and formulate economic policy that may be unfavorable to Nigeria. For the fact that U.S.A is the *World Policeman* which is very powerful, economically and politically than Nigeria, Europe, and other nations; FGN can reduce the quantity of her assets in saved in USD but increase the amount of reserves in EURO. Thus, Nigerians can vote for USD as a World Currency if United Nations asks for it.

GHC had the worst performance at the FEM in the period studied. As such Nigerians are advised to avoid depositing and investing in GHC but accept liabilities in it. However, it may not be possible to keep Nigerian Assets and Liabilities in different

currencies. If given opportunity, everybody would engage in Carry Trade. Carry Trade occurs when one borrows a currency [say, Japanese Yen, called Funding Currency due to fall in value and low interest on loans)] but Invests in another currency [say, Australian currency (called Investment Currency, for its value is rising)].

Each and every individual person, household, firm and government is advised to open more than one domiciliary account. For instance, a EURO Domiciliary account for Fixed Assets and a USD Domiciliary account for Current Assets. This is because USD and EURO fulfill all attributes of money more than other currencies. Individual persons, Households and Firms are encouraged to open Domiciliary Accounts in EURO and continue to deposit their surplus but insufficient fund in it until they have sufficient fund to execute their desired project. However, government agencies are advised to keep monies meant for on-going projects in USD based domiciliary account for the fact that they may need to buy some things in foreign currencies and the most convertible foreign currency is USD.

Nigerians shall produce and purchase commodities that can be sold to the countries that patronize Nigerian products. Individual persons, households, firms and governments who fall within the Deficit Spending Unit in Nigeria shall not borrow money before they will commence real expenditure on their desired projects; stop borrowing monies whose value appreciates in the foreign exchange markets and first buy the most tangible and lasting properties before the intangible and perishable commodities. Alternatively, Surplus Spending Units in NGN shall, As soon as Possible, loan out their surplus income in NGN denomination because keeping the money in NGN denomination, at hand, home and/or bank will create unemployment of productive resources and depreciates the total value of output of the wealth creator.

Nigeria shall join the BRICS countries and make their Abbreviation to be BRINCS and enlarge the scope at which Nigerians can trade and keep their Assets.

Cashless Policy shall be extended to the FEM. Here, FGN through CBN are advised to allow DMBs to sell Key Currencies, directly and online to customers who have Domiciliary Accounts but shall set a maximum limit of the amount of money that could be kept in Domiciliary Accounts with respect to individuals or households, economic sectors,

periods, purposes, and places. Such FE shall not be withdrawable except for some Nigerians with Visa Card. This will reduce keeping FE at home or selling them at Bureau de Change at exorbitant prices. It would douse it into their minds that they are not being patriotic but self-centered. On the other hand, the target limit set by Central Bank of Nigeria would enlighten some people who have been keeping a lot of the monies in Domiciliary Account without the knowledge of its negative impact on the Nigerian Economy. Such maximum limit may be equated to a quarter of the value of NGN one can keep in his Naira Account. This will minimize money laundering.

CBN shall create appropriate and direct avenues for the private sectors to purchase and deposit their assets in their desired Supra-National Currency. It should also intensify her efforts at verifying metal monies, coins or assets in term of Gold that are being deposited in the Domiciliary Account of all Deposit Money Banks, in Nigeria, at unannounced intervals. The same exercise goes for the key currencies in order to avoid transfer of ghost and fake FE. CBN is also advised to re-energize the research, training, project execution, and capacity building arm, within it to implement the suggested policies.

Just as GDP, Foreign Reserve, Petroleum Price, External Debt, etc are measured in USD; the Researchers suggest that CBN should be measuring the Minimum Wage of Labor in Nigeria also in USD. This will enable the workers to know the direction of movement of their rewards for hard work.

This kind of study can be replicated using different currencies as variables in order to verify some or most, if not all, of the discoveries of this study. Researchers shall be using Algebraically based Betas of the Variables for Time Series Data instead of Number Bases. In addition, the fact that ADF, Co-integration, and Granger Causality tests do not give credence to determining the superiority of one variable over the other(s) shows that the criticisms of inconsistency and spurious result of OLS shall be down-sized. In order not to throw away the bath-water with the baby, researchers shall be employing OLS Method when they need to discover specific, current and future relationship among variables.

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