Exchange Rate Volatility And Economic Growth In Nigeria

Ugochukwu Paul Ubah

Economics Department, Afe Babalola University,

Ado-Ekiti, Ekiti State, Nigeria

ABSTRACT

This study seeks to evaluate the effect of exchange rate volatility on economic growth in Nigeria on the basis of annual data from 1980 to 2012. A review of the literature reveals that exchange rate volatility can have either positive or negative effect on economic growth. The empirical analysis began with testing for stationarity of the variables by applying the Augmented Dickey-Fuller (ADF). This was followed by co-integration test of the model. The unit root test results show that all variables were integrated at order one, that is I(1)). Also, co-integration analysis indicated that variables are co-integrated. Employing the Generalised Autoregressive Conditional Heteroscedasticity (GARCH) technique to generate exchange rate volatility, the relationship between exchange rate volatility and economic growth was estimated. Findings further show that in the short run, economic growth is negatively responsive to exchange rate volatility in Nigeria case while in the long run, a negative relationship exists between the two variables in the Nigerian economy. The result also indicates that foreign direct investment depresses economic growth in Nigeria. Thus, the huge inflow and stock effect of rising foreign direct investment is not felt while the output effect is evidenced in factory closure and re-location to neighbouring countries. The study recommends control of import content of both public and private expenditure, greater diversification of the economy through investment in key productive sectors of the economy to guard against the vicissitude exchange rate volatility.

Keywords: exchange rate, Nigeria, FDI, economic growth, GDP

1. INTRODUCTION

Various identities have been attached to the dynamics of exchange rate and its management, the rate which can be seen as how much of a nation's currency in relative to another nation, or the needed volume of units of a currency that can purchase a volume of units of another currency, has over time undergone mind blowing and ground shifting developments in its analysis and management by policy makers and academics alike. These empirics has been as a result of the Bretton Wood system of alteration peg materialised in 1970 promoting flexible exchange rate and further enhanced by the emergent nations. It has been a concern also for those nations embark on structural transformations in the 1980's as well as in the rouse of the exchange crises in developing economies in the 1990's.

The Flexible exchange rate is marked by fluctuations thus making it a focal point debates. Invariably, Due to threats it poses on eventual business and subsequent national outcomes as trading partners would always and most certainly prefer a more stable and ascertainable exchange rate structure than one that poses more risk to investment. The rate is considered volatile, when a high degree of short-run fluctuations are captured over time. As noted by previous studies a relative stable exchange rate system is imperative for economic growth

and development. A volatile exchange rate structure promotes uncertainty and high risks parlance in possible investments opportunities with alarming effects on macroeconomic outcome. (Mahmoud and Ali, 2011).

Nigeria as a nation is known around the world to have undergone and developed intricate polices that has overtime manipulated the state of the Nigerian currency from its fixed state to its current flexible state. The evolution which can be traced as far back as the 60's was influence largely by a number of dynamics which includes but not limited to the changing pattern of global trade, institutional variations in the economy and structural alterations in production , which during this period the agricultural sector contributed the bulk of the foreign exchange earnings. However in the early 70's the subsequent discovery of the oil promoted a boom in a now flexible exchange rate system of Nigeria prompting the management of exchange rate dynamics in order to ensure that shortages did not rise ever since then the Nigerian currency has witnessed series of fluctuations in response to market fundamentals . This was in a bid to realize an effective exchange rate structure that would enhance economic growth, diversification and enhancement of the productive structures of the economy. However such fluctuations appear not to have desired effects. For instance, Nigerian as a nation is factually described as a mono-economy, with its means of sustenance; largely dependent on proceeds from crude oil earnings; whereas formally productive sectors such as agriculture and manufacturing sectors and its former and potential earnings are overlooked and the sectors neglected. Among the objectives that macroeconomic policy seeks to achieve in any economy is to rapidly grow the economy together with little or no destructive volatility state of its currency.

But the question that comes to the mind of macroeconomists, central bankers, investors and policy makers is how should volatility of exchange rate be in order to grow the economy rapidly? This is because unfavourable state of volatility is capable of disrupting the smooth functioning of an economy by imposing certain costs which inhibit economics growth. In the economy of Nigeria, the connection between exchange rate volatility and economic growth plays out like a delicate mirage to reveal any obvious relationship. This does not in any way tell us precisely what the relationship is like. Therefore an in-depth empirical verification is inevitable to resolve the above puzzle in the Nigerian economy. Hence it is imperative to ask the following questions   .
What the nature of exchange rate volatility is in Nigeria? and What is the nature of causality of this relationship in the Nigerian economy.

2. LITERATURE REVIEW

The nexus of economic growth and real exchange rate volatility has been well trashed out by existing economic and financial literatures through selected macro-economic variables and identities, such as trade, investment stocks, unemployment, and productivity. In the area of exchange rate volatility and economic growth, Javed and Faooq (2009) using the auto regressive distributed lag model in the study of this

relationship in Pakistan discovered that domestic economic performance is very sensitive to exchange rate volatility in the long run. Also in the similar work of Mahmmod, Ehsanullah and Ahmed (2011) that is anchored on the GARCH model and seeking to explain the effect of volatility in exchange rate on selected macroeconomic variables (Gross domestic product, trade openness and FDI) in Pakistan concluded that such volatility affects positively gross domestic product, growth rate and trade openness and negatively affects FDI. Similarly Musyoki, Pokhariyal and Pundo (2012) in examining such impact using the same model for Kenya's economic growth are of the opinion that volatility in real exchange rate reflects a negative impact on such growth.

However in the empirical work of Azid, Jamil and Kousar using time series analysis and modelling the research using conditional estimates of all variables are of the contrasting view that exchange rate volatility establishes an adverse relationship on economic growth. Also a similar study carried out by Polodoo, Seetanah and Padachi (2011) on the "impact of exchange rate volatility on macroeconomic performance on small island developing states" using the generalised method of moments found out that in dynamic setting volatile exchange rates does not influence the macroeconomic variables. This is in tandem with the findings of Akinbobola and Oyetayo (2010) and Aghion et al (2009).

Holland, Vieira, Silva and Bottecchia (2011) in the study of 82 advanced and emerging economies discovered that a relatively less volatile real exchange rate structure has a positive effect on economic growth and vice-versa similar methods as adopted by Edwards and Levy-Yeyati (2003) for a total not of 180 countries reviled enhanced growth indices for nations with flexible exchange rate regimes, the study covers the period of a century and twenty years and it discovered an adverse relationship between exchange rate stability and economic growth and development. They however suggested that outcomes of the stated results where hinged on sampling and timing structures. However, irrespective of studies that abound of this subject, there still remain an existing shortage of empirical literatures in the Nigerian case. Nevertheless studies on the effect of volatility in exchange rate and identified macroeconomics variables (Akpokodje, 2009; Aliyu, 2010, 2009a; 2009b; Ogunleye, 2009; Olowe, 2009; Yinusa&Akinlo, 2008; Yinusa, 2008; 2004).The attention of volatility studies in the Nigerian economy has been invested largely on trade/trade outcomes, oil and its earning potentials with no extensive work on other imperative macro-economic indexes. For example Akpokodje (2009) with a GRACH approach; using data periods ranging from 1986-2006 of selected non Communaute Financiere Africaine (non-CFA) nations of the African continent investigated the impact of volatility of exchange rate of imports and export and established an adverse impact of volatility on trade balances and advocations were made by the authors as to policy interventions that will ameliorate and if possible result to the elimination of exchange rate volatility

Again, Yinusa (2008) with the application of granger-causality test for quarterly obtained data from 1986-2003; in the study of volatility in volatility in exchange rate and dollarization in Nigeria and it was discovered that a bi-causality relationship runs from dollarization to exchange rate volatility in Nigeria and was in fact domineering. He also suggested that polices that will reduce volatility and manage should be put in place in the economy. However, no specific measure of exchange rate volatility was stated in the study.

Also, Ogunleye (2009) in the study for Nigeria and south Africa examined the relationship the dynamics of foreign direct investment and volatility in exchange rate; adopting a two-stage least square model discovered that in Nigeria a significant relationship exists among selected variables (exchange rate volatility and foreign direct investment). Hence each having a tendency of affecting each other negatively or positively whereas in South Africa the relationship is sublime/frail and this could be traced to effective balance of payment management policy of the apex bank of the south African.

Extensive work has also been carried out by Aliyu (2009a) where quarterly data system ranging from 1986-2006 using a standard deviation identity for volatility in exchange rate in the investigation of its relationship as its affects non-oil exports in Nigeria and results showed that volatility in exchange rate hampers non-oil exports in Nigeria. In the same vein, Aliyu (2009b) investigated the effect of volatility in exchange rate, shocks in oil price on economic growth in Nigeria and discovered results tandem as such shocks and volatility affects growth in the economy. Nevertheless the extent and persistency of volatility was not established using consistent econometric analysis.

However, in relation to researches on the impact of volatility in exchange rate and selected macro-economic variables; specifics can be attached to the work of Olowe (2009) where he adopted the use of the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models to analyse the volatility of naira/dollar rates in Nigeria, discovered that with the use of the model the extent and persistency of volatility can be established.

From the review of works done on exchange rate volatility and its impact in the Nigerian economy it can be concluded that most studies seek to analyse such impact on selected macroeconomic variables with little or no work done in the area of such impact on economic growth directly. Hence this study seeks to bridge the gap of knowledge by throwing light in this area.

3. METHODOLOGY AND DATA

3.1 MODEL

In investigating the dynamics of volatility in exchange rate and economic growth, the study follows Mundell-Fleming IS-LM BOP Model approach proposed by Kandil (2004) and Yaqub,(2010) (Dickson,

2012) . This demand determined model captures the broad sectors of the economy and the mechanization of the exchange rate in the external sector as it affects other sectors of the economy hence. This implies that:

GDP = f(EVAT, FDI, EXR, RES,INR) ....(1)

Where GDP is the gross domestic product: EVAT is the exchange rate volatility measured in terms of deviation of the rate from i: s mean: FDI is the foreign direct investment EXR is the exchange rate: RES is the external reserve and INR is the interest rate. Hence stating the above as a liner function we have:

$$GDP = \mu_0 + \mu_1 EVAT + \mu_2 FDI + \mu_3 EXR + \mu_5 RES + \mu_7 INR + U_t \dots\dots\dots\dots(2)$$

This study uses annual data for the period 1980-2012. The study sources data from the World Bank's World Development Indicators (WDI) 2012 All the variables are expressed in natural logarithmic form. This transformation is often considered to stabilize the variance of a series. The model will be estimated using the Autoregressive Conditional Heteroskedasticity (ARCH) and GARCH model. The unit root tests will traditionally be investigated using Augmented Dickey-Fuller test or ADF as developed by Said and Dickey (1984) and/or Phillip and Perron (1988) test or PP, which control for serial correlation.

In seeking to analyse causality, Granger (1988) assimilated the notion of cointegration into causality. With cointegrated variables, Granger (1988) stated "*that causal relations among variables can be examined within the framework of the ECM*". While the short run dynamics are taken care of by the distinct coefficients of the lagged terms, the error correction term covers the evidence of long run causality. Hence, significance of each explanatory variable lags depict short run causality. On the other hand, a negative and statistical significant error correction term is assumed to signify long run causality. Adebola(2011).

4. PRESENTATION AND INTERPRETATION OF RESULTS

Unit root tests are conducted for variables using the augmented dickey fuller-test and from ADF statistics shown in the table below, the result shows that all variables in study (EVO, INT, RES, FDI, GDP, AND EXR) were integrated at order one, that is I(1) or they were stationary at first difference. Comparing the variables levels with their first difference (the ADF unit root statistics) and various probabilities, the test statistics show that the variables are integrated at order of one. All the variables were statistically significant at 1 percent, 5 percent, and 10 percent critical values in first difference.

From the results in the below table summary, the null hypothesis states that there is an existence of unit root. And from the table summary below this implies that all the series are non-stationary at levels. Therefore the null hypothesis ($\rho=1$) is accepted at levels and the null hypothesis ($\rho=1$) that the series are non-stationary after

the first and second difference is rejected for all the series. So it is an I(1) series. We therefore conclude that the series are of order one I(1).

Table 1: Summary of Results of Unit Root Tests

No: of observations: 30

Maximum lag length: 2

	PROB.	ORDER OF INTEGRATION	ADF t-STAT
Series			
EVO	0.0000	I(1)	-8.378203
INT	0.0000	I(1)	-6.598735
RES	0.0001	I(1)	-5.699394
FDI	0.0005	I(1)	-4.823182
GDP	0.0023	I(1)	-4.257833
EXR	0.0025	I(1)	-4.219724

Source: computed by author using E-views 4

4.1 ANALYSIS OF CO INTEGRATION TEST RESULTS

Next we look at the long run linear relationship using the Johansen cointegrating model, and find out if there is a possibility of an existence of a cointegrating relationship among the variables. The summary of the Johansen' co integration tests are presented below.

Table 2: Summary of Results of co integration Tests

Unrestricted Cointegration Rank Test (Trace)

			0.05	0.01
Hypothesized	Eigenvalue	Trace Statistic	Critical Value	Critical value
No. of CE(s)				
None **	0.822776	121.9266	94.15	103.18
At most 1 *	0.619114	70.01634	68.52	76.07
At most 2	0.525176	41.05868	47.21	54.46
At most 3	0.357232	18.71437	29.68	35.65
At most 4	0.166157	5.455210	15.41	20.04
At most 5 *	0.000130	0.003904	3.76	6.65

Source: computed by author using E-views 4

(**) denotes rejection of the hypothesis at the 5%(1%) level

Trace test indicates 2 cointegrating equation(s) at the 5% level

Table 3: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	Eigenvalue	Max-EigenStatistic	5 PercentCritical Value	1 PercentCritical Value
No. of CE(s)				
None *	0.822776	51.91031	39.37	45.10
At most 1	0.619114	28.95766	33.46	38.77
At most 2	0.525176	22.34430	27.07	32.24
At most 3	0.357232	13.25916	20.97	25.52
At most 4	0.166157	5.451306	14.07	18.63
At most 5 *	0.000130	0.003904	3.76	6.65

Source: computed by author using E-views 4

*(**) denotes rejection of the hypothesis at the 5%(1%) level

Max-eigenvalue test indicates 1 cointegrating equation(s) at the 5% level

Max-eigenvalue test indicates no cointegration at the 1% level

The table above shows the estimation of the Johansen co-integration relation among the variables. From the table, the maximum Engen test indicates one (1) co-integrating equations at the 5 percent level. This differs from the Trace statistic which indicates two (2) co-integrating equation at 5 percent level. However, according to Gujarati (2003), if such situation arises, the Trace Statistic supersedes the Maximum Engen. Thus we reject the null hypothesis of no long-run relationship, in order words there exist a long run relationship amongst the identities of study

4.2 CAUSALITY TESTS

The results of the bivariate Granger causality test are presented in the table below. As shown in the results in the tables in section below, for the relationship between GDP and exchange rate volatility in Nigeria, we accept the null hypotheses in both cases that exchange rate volatility does not granger cause GDP, and GDP does not granger cause exchange rate volatility for Nigeria respectively. This is obvious, given the insignificance of their respective probability values in the granger causality table.

In this situation, we conclude that there is no form of causal relationship exists between exchange rate and economic growth in Nigeria. This implies that no form causality between economic growth and exchange rate volatility is found in the long-run period. Nevertheless with the result of the cointegration, we observe that if the system is exposed to a shock, it will converge to the long-run equilibrium at a relatively high speed for economic growth and exchange rate volatility. This observed lack of direction of flow between economic growth and exchange rate volatility presupposes the fact that the Nigerian economy is capable of attaining significant economic growth without much significant impact emanating from fluctuations from its exchange rate and vice versa. This is true given the fact that the mainstay of the Nigerian economy has been oil revenue

and significant fluctuations in the revenue base of the country has been largely due to the rise and fall in the international price of crude oil as against fluctuation in the exchange of the naira to the dollar

4.3 BIVARIATE GRANGER CAUSALITY FOR NIGERIA

Table 4: Pairwise Granger Causality Tests

Sample: 1980 2011

Lags: 10

Null Hypothesis:	Obs	F-Statistic	Probability
EVO does not Granger Cause GDP	22	0.57431	0.78360
GDP does not Granger Cause EVO		4.10740	0.36763

Source: computed by author using E-views 4

4.4 GARCH ANALYSIS

Next we look at the short run linear relationship of variables in both countries using the (ML-ARCH-GARCH) normal distribution method, and the result of the empirical analysis with respect to gross domestic product (GDP), which is our proxy for economic growth, is presented below.

Table 6: Summary of GARCH results

Variables	Coefficient	Std. Error	Prob.
C	1.132208 (0.854354)	1.325221	0.3929
GDP(-1)	0.743904 (18.8533)	0.039457	0.0000
EXR	-0.020703 (-0.261620)	0.079136	0.7936
EVO	-0.004784 (-0.653056)	0.007326	0.5137
EVO(-1)	-0.005159 (-0.545120)	0.009465	0.5857
RES	0.256342 (3.787383)	0.067683	0.0002
INT	-0.027606 (-0.179572)	0.153733	0.8575
FDI	-0.028012 (-0.430112)	0.065127	0.6671
GARCH	1.258631 (5.551303)	0.226727	0.0000

R-squared	0.964972
Adjusted R-squared	0.954311
S.E. of regression	0.142862
Durbin-Watson stat	2.066005

Source: computed by author using E-views 4

The regression result of the Nigerian economy in the above table indicates partial conformity of the apiori expectation. In the analysis the coefficients of EVO, EXR, RES, and INT present the apriori expected signs with RES and the lag of GDP being significant. Foreign direct investment is not rightly signed. This in

explicit terms indicates that all the variables in study are however not significant with the expectation of RES and the lagged GDP variable. Thus as evidenced by the result, gross domestic product is negatively responsive to exchange rate volatility. This is in conformity with the works of Cerra, Panizza and Saxena 2009, Furceri and Zdzienicka 2009, Dickson 2012 that affirm that exchange rate volatility may affect growth positively or negatively, though statistically insignificant in explain the variation in the dependent variable. In this regard, we conclude that the null hypothesis is accepted. This corroborates Levine and Crakovic (2001) on the effect of exchange rate volatility on the growth in 73 countries. They concluded that the effect of exchange rate volatility hidden in other variables, pushing up interest rate. This indirectly reduces investment, tax revenues, economic growth, and the ability of producers to exporters to produce and sell goods abroad.

Also the study is in line with that of Dickson (2012) that spanned out to determine the impact and relationship of exchange rate volatility and economic growth of Nigeria. He concluded that exchange rate volatility has a negative impact to the economic growth of Nigeria. he also recommended an enhanced state of stability of exchange rate for improvement of economic growth.

Also the insignificance of FDI in the short-run analysis is an indication that the over reliance of the economy on possible FDI channels, at the expense of improving local content structure, to generate a desired level of economic growth has not produced the desired result. This is not surprising however, due to the non-utilization of local content policy strategy, alarming levels of interest rates and disturbing state of political instability has hampered the ability of FDI to improve upon other sectors of the economy.

Furthermore, an examination of the result shows a good fit in terms of the standard error of the parameters (std$\mu 0$>std$\mu 7$), which indicate a non-negative constant term for the growth no matter the changes in the independent variables and apriori expectation and statistical significance of the explanatory variables.

The z-statistics, which is computed as the ratio of an estimated coefficient to its standard error is used to test the hypothesis that a coefficient is equal to zero. To test our hypothesis, we used the probability (p-value) of observing the z-statistics given that the coefficient is equal to zero. For this study, we are performing the test at the 1percent, 5 percent and 10 percent significance level, that is a p-value that ranges between 0.00 -0.10 are taken as evidence to reject the null hypothesis of a zero coefficient. From the result of the estimated model, the probability value for (RES) and GDP lagged by one period ranges between 0.00 and 0.05. Thus, we are rejecting the null hypothesis and accept the alternate hypothesis. The result showed that the FDI variable fell short of the aprior expectation.

The R-sqaured, value indicated as 0.9649 , shows that the variables in the regression equation explains 96 per cent of all the variation in economic growth (GDP) in Nigeria for the period 1980 to 2011. The Durbin-Watson (DW) test statistic (d*) show the absence of first order serial correlation between the error terms. From the result d* is greater than 2, that is 2.066005 > 2 for Nigeria. We therefore accept the null hypothesis

(H0), which says that there is no positive autocorrelation of the errors' terms; we reject the alternative hypothesis (H1), which says that there is positive weak autocorrelation of the errors' terms.

The overall GARCH probability identity that indicates the level of significance of the whole empirical analysis of the impact of exchange rate volatility on economic growth of the selected countries indicates that the whole model for analysis is highly significant in explaining the dynamics of volatile on economic growth.

Looking critically at the numerical value of the coefficients and their corresponding signs a 1 percent increase in volatility will cause GDP in Nigeria decrease by 0.00478 percent. Theoretically, there is no agreement.

Similar findings were reported by Schnabl (2007a and 2007b) study on emerging Europe and East Asian countries and in small open economies at the EMU periphery. This result is at variance with Aliyu 2009 study on impact of oil price shock and exchange rate volatility on economic growth in Nigeria. Exchange rate stability is generally recognised as the pillar behind the Asian miracle and the World Bank (1993) and McKinnon (2005) saw a link between decline in growth in Asia and their move towards flexible exchange rate system. This, we believe, stems from the perceived positive impact of exchange rate stability on economic performance of the East Asian economies prior to 1997/1998 when economic crisis engulfed the region. McKinnon and Schnabl (2003, 2004) emphasize the role of low transaction costs for international and intra-regional trade and capital flows.

The unexpected sign of foreign direct investment indicates that a 1 per cent increase in foreign direct investment reduce economic growth by 0.028 per cent in Nigeria. This is inconsistent with our apriori expectation and is line with Dickson (2012) work on the Nigerian economy. This is enhanced by the weak market structure argument of the developing and under developed economies such as those found in the Nigerian economy.

Also from indications in the above table the coefficient of EXR indicate that everyone per cent increase in the exchange rate value against the trading countries currency, will cause a reduction in GDP in Nigeria by 0.020703 percent. The dynamics of this exchange rate is known from theory, that high valuation of the currency of a country affects its ability to export efficiently. However the Nigerian economy, characteristically are import dependent. This results from the lack of extensive technological know-how needed for the production of needed goods and services thus causing a large percentage of imports to be that of consumer goods. This on the long run affects the productive state of such economy in turn harming economic growth in the process.

Also looking at the coefficient of interest rate, which is in line with the aprior expectation, a one per cent increase in interest rate will decrease economic growth in by 0.027606 in Nigeria. Thus we can infer that interest rate state through its extensive dynamics can be responsible for the negative magnitude effect of

foreign direct investment in both economies. The reserve coefficient is significantly positive in nature thus in line with presumed expectation, and this can be attributed to the increased revenue from the sale of crude oil products.

5. CONCLUSION

The study scrutinizes the impact of exchange rate volatility on economic growth in Nigeria, from 1980 to 2011. Exchange rate variability was measured using the GARCH approach. The result seems to contradict report of growth figures reported by the government of the country in study (Nigeria 7%) {Trading economics, 2013}. However true it may be, empirical pointers are showing that important macro-economic identities that aid economic growth has not being efficient and effective in its modes of operation. The inflow of foreign direct investment is not felt on the sectors that are in need of them, hence, growth rate seen in the economy does not reflect in living standards. There is a neglect of key sectors of the economy, particularly manufacturing and agriculture, which has invariably reduced level of economic growth in both countries. Whereas the improvement in these sectors would have diversified revenue base for the countries in study. Moreover, these two sectors employ a large proportion of labour as can be observed in emerging economies of the world, and they constitute the engine room of economic growth. Also adequate steps have not being put in place for the fine tuning of exchange rate dynamics which is set to frustrate the growth policies of the nation.

6. RECOMMENDATIONS

The empirical results confirm that exchange rate volatility have tendencies of having negative effect on economic growth. This implies that policy that will enhance stability of the exchange rate will promote growth. In this regard, the import content of both public and private expenditures can be controlled. One way of achieving this, is to stop importation of goods and services that can be produced locally as an avenue for reducing demand for foreign exchange. When the current increasing importation of petroleum products halts, coupled with concerted efforts to improve electricity supply, the positive income effect of increasing international oil price will be felt in the economy, while the negative output effect, experienced as a result of importation of petroleum products, will disappear, the end result is economic growth. Other recommendations include the following:

– Nigeria should put up measures to stop unviable trips abroad by political office holders that has no economic value, this was not one of your variables

– The countries should encourage and enhance policies to stop its citizens from storing wealth in the U.S dollars. This will reduce demand for foreign exchange.

–   Infrastructural development to stem the relocation of companies to neighbouring countries.

–   The countries of study should enhance and promote a stable and favourable interest rate policy that that will encourage investors to invest in sectors that will lead to constructive economic growth.

7. REFERENCES

African Economic Outlook. 2007. *World Bank Publication*.

Abba S & Zhang Y (2012*) "exchange rate volatility, trade flows and economic growth in a small open economy"* International Review of Business Research Papers Vol. 8. No.2. March 2012. Pp. 118 – 131

Arize, A. C. (1998)" *The Effects of Exchange Rate Volatility on U.S. Imports: An Empirical Investigation*". International Economic Journal 12:3, 31–40

Akpokodje G.(2009). *"Exchange rate volatility and External Trade: The Experience of Selected African Countries*". In. AdeolaAdenikinju, DipoBusari and Sam Olofin (ed.) Applied Econometrics and Macroeconomic Modelling in Nigeria. Ibadan University press.

Alaba, O. (2003) *'Exchange Rate Uncertainty and Foreign Direct Investment in Nigeria.'*A Paper Presented at the WIDER Conference on Sharing Global Prosperity, Helsinki, Finland, 6- 7, September

Alexakis, P., and N. Apergis (1994)" *The Feldstein-Horioka Puzzle and Exchange Rate Regime: Evidence from Cointegration Test."* Journal of Policy Modeling 16, 459–472.

Aliyu, S. U. R. (2009a*). "Exchange Rate Volatility and Export Trade in Nigeria: An Empirical Investigation".* MPRA paper No. 13490. Retrieved from http://mpra.ub.unimuenchen.de/13490/

Aliyu, S. U. R. (2009b). *"Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation".* MPRA Paper No. 16319. Retrieved from http://mpra.ub.uni-muenchen.de/16319/

Aliyu, S. U. R. (2010). *"Exchange Rate Pass-Through in Nigeria: Evidence from a Vector Error Correction Model".*Conference paper presented in University of Oxford. Retrieved from http://www.csae.ox.ac.uk/conferences/2010 EDiA/papers/012-Aliyu.pdf

AliyuShehu Usman (2009*)" Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation*". Central Bank of Nigeria

Aliyu, S.U.R; Yakub, M.U; Sanni G.K and Duke O.O (2009*).―"Exchange Rate Pass-through in Nigeria: Evidence from a vector Error Correction Model*" Paper presented at the CSAE conference, Oxford University, UK.

Amuedo-Dorantes, C., and S. Pozo (2001) *"Exchange-Rate Uncertainty and Economic Performance*".Review of Development Economics 5:3, 363–74.

Akpan I.P (2008) *'Foreign Exchange Market and Economic Growth in an Emerging Market: Evidence from Nigeria'.* African Economic Business Review volume 2 fall

Bahmani-Oskooee, M., and J. Asle (1995) *"Is There any Long-Run Relation Between the Terms of Trade and the Trade Balance?*" Journal of Policy Modeling 17, 119–205

BANK OF GHANA, 2004.*Determinants of the Cedi/Dollar rate of exchange in Ghana*.[Online]. Available: http://www.gov.gh/index1.php?linkid=160&archived=220&page=1&date=31./2F05%2F2004. [Accessed 24 may 2013].

BANK OF GHANA, 2007.Forex bureau rates.[Online]. Available: http://www.bog.gov.gh/index1.php?linkid=136&qrydate=2007. [Accessed 15 may 2013].

Bollerslev, T., R. F. Engle, and D. B. Nelson (1994) ARCH Models. In Chapter 49 of Handbook of Econometrics, Volume 4. North-Holland.

Bollerslev, T., R. F. Engle, and D. B. Nelson (1994) ARCH Models. In Chapter 49 of Handbook of Econometrics, Volume 4. North-Holland.

Cham (2010) *"real exchange rate misalignment in west African monetary zone"(WAMZ) countries"* African Journal of Marketing Management Vol. 2(4) pp. 80-90, April 2010

Campa, J. and Goldberg, L., (1995), *"Pass-Through and Exchange Rates: A Cross-Country Comparison"*, NBER Working Paper, 5139.

Cerra, V, U. Panizza and S.C. Saxena (2009), *"International Evidence on Recovery from Recessions"* IMF Working Paper, No. 09/183.

Cottani, J. A. Cavallo, D. F. and Khan, M. S. (1990*).'Real exchange rate behavior and economic performance in LDCs'*, Economic Development and Cultural Change 39(1), pp. 61-76.

Cushman, D.O(1986). *"Has exchange risk depressed international trade? The impact of third-country exchange risk."* Journal of International Economics, 5 (September 1986)

Danson M, Ganesh P, Moses P (2012) *"the impact of real exchange rate volatility on economic growth: Kenyan evidence"* business and economic horizon pp 59-75

Darby, J., Hughes-Hallet, A., Ireland, J. and Piscitelli, L., (1999), "*The Impact of Exchange*

Rate Uncertainty on the Level of Investment", *Economic Journal,* 109(454), C55-67.

Dickey, D. A. and W. A. Fuller (1979*)" Distribution of the Estimators for Autoregressive Time Series with a Unit Root".* Journal of the American Statistical Association 74, 427–431.

Dickey, D. A., and W. A. Fuller (1981) Likelihood Ratio Test for Autoregressive Time Series with a Unit Root. Econometrica 49, 1057–72.

DR. Itsede (2010) *"the challenges of establishing the second monetary zone in west Africa"* central bank of Nigeria seminar on the proposed second west African monetary zone(WAMZ).

Eichengreen, Barry / Leblang, David 2003*: "Exchange Rates and Cohesion: Historical Perspectives and Political-Economy Considerations".* Journal of Common Market Studies 41, 797–822

Engel, R., 1982. *"Autoregressive conditional heteroscedasticity with estimates of the variance of the United Kingdom's inflation".*Econometrica, (50), pp. 987-1007.

Franke, Gunter. 1991. *"Exchange Rate Volatility and International Trading Strategy."Journal of International Money and Finance* 10: 292-307.

Furceri, D. and A. Zdzienicka (2009) "*The Real Effect of Financial Crises in the European Transition Economies"* GATE Working Paper No. 2.

Faruqee, H. (1995)" *Long-Run Determinants of the Real Exchange Rate: A Stock- Flow Perspective".* IMF Staff Papers 42:1, 80–107.

Ghosh A, Gulde A, and Wolf H (2003)" *Exchange Rate Regimes: Choices and Consequences".*CambridgeMasschusette: MIT Press

Grier, K. B., and Mark J. Perry (2000) *"The Effects of Real and Nominal Uncertainty on Inflation and Output Growth: Some Garch-m Evidence".* Journal of Applied Econometrics 15:1, 45–58.

Gujarati, D.N.. Basic Econometrics, 4th ed., New York: McGraw-Hill. 2003

Ibikunle, JA & Isaac, A 2011, *"An Empirical Investigation of the Link between Exchange Rate Volatility and Trade in Nigeria "'* Journal of Emerging Trends in Economics and Management Sciences 2(3): 175-183.

IMF (1984) *'Exchange rate variability and world trade'.* IMF Ocassional paper 28.

Johansen, S. (1991) *"Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models".*Econometrica 59, 1551–1580.

Johansen, S. (1995*)" Likelihood-based Inference in Co-integrated Vector Autoregressive Models."* Oxford: Oxford University Press

Joyce, J., and L. Kamas (1994*) Money and Output under Alternative Exchange Rate Regimes in the U.S.* Journal of International Money and Finance 13:6, 679–697

Kandil, M &Berument, H &Dincer, N. N (2007), *The effects of exchange rate fluctuations on economic activity in Turkey*, Journal of Asian Economics, No.18, P. 466–489.

Kandil, M (2004), *Exchange Rate Fluctuations and Economic Activity in Developing Countries: Theory and Evidence,"* Journal of Economic Development, Vol. 29, pp. 85–108.

Kandil, M. (2000), *"The Asymmetric Effects of Exchange Rate Fluctuations: Theory and Evidence from Developing Countries,"* IMF Working Paper WP/00/184.

Kroner, K., and W. Lastrapes (1993) *"The Impact of Exchange Rate Volatility on International Trade: Reduce form estimates Using the GARCH-in-Mean Model".* Journal of International Money and Finance 12, 298–318

ManolisAnastopoulos*"Theories of Exchange rate determination"* International Finance

Mankiw, N. G. Romer, D. and Weil, D. N. (1992*).'A contribution to the empirics of economic growth'*, The Quarterly Journal of Economics 107(2), pp. 407-37.

Masaki T (2009) *"Monetary Integrations in Western Africa and the Real Effective Exchange Rates (1999-2006)"* Discussion Paper Series 13 Faculty of Economics and Management, Kanazawa University

Masaki,T.(2008). *"Trade partners and the real effective exchange rates of UEMOA countries(1999-2006)"*, Discussion Papers Series, No.10, Faculty of Economics, Kanazawa University, 2008, August

Mahmood, I. & Ali, S.Z. (2011).*Impact of Exchange Rate Volatility on Macroeconomic Performance of Pakistan*, International Research Journal of Finance and Economics, issue 64.Pp. 1450-2887.

Mordi, M.C. (2006). *"Challenges of Exchange Rate Volatility in Economic Management of Nigeria, In the Dynamics of Exchange Rate in Nigeria"*, CBN Bullion Vol. 30 (3), July-September. Pp.17-25

OBADAN, M.I., 1994. *"Real exchange rates in Nigeria: a preliminary study"*. Ibadan: National Centre for Economic Management and Administration.

Ogunleye, Eric Kehinde (2008) *'Exchange Rate Volatility and Foreign Direct Investment Inflows in Selected Sub-Sahara African Countries, 1970-2005'*. PhD. Dissertation. University of Ibadan

Pesaran, M. H., and R. Smith (1998) Structural Analysis of Cointegrating VARs. Journal of Economic Surveys 12, 471–505.

Qureshi M &Tsangarides C (2004) *"monetary union membership in west Africa:* A cluster analysis"

Razazadehkarsalari A., Haghir F. &Behrooznia, A. (2011). *"The Effect of Exchange Rate Fluctuations on Real GDP in Iran"*, AmericanJournal of Scientific Research Issue, 26, Pp. 6-18.

Scnabl Gunther (2007a) *'Exchange Rate Volatility and Growth in Small Open Economies at the EMU Periphery'* European Central Bank Working Paper No. 773

Scnabl Gunther (2007b) *'Exchange Rate Volatility and Growth in Emerging Europe and East Asian'*CESIFO Working Paper No. 2023

Sinha, D. (1999*) Export Instability, Investment, and Economic Growth in Asian Countries: A time Series Analysis*. Yale University and Macquarie University(Australia). (Center Discussion Paper No.799.)

TAKAENDESA, P., 2006. *"An empirical analysis of the determinants of the real exchange rate behaviour in South Africa"*.Master"s thesis, Rhodes University.

Taylor, J.A., 2010. *"Is West Africa Ready for a Common Currency"*: A Study of WAMZ and Eco.The UCLA Undergraduate J. Eco.

V polodoo (2011) *"exchange rate volatility and macroeconomic performance in small island developing countries"* a paper presented at the UOM-WCP international conference at le meridian, Mauritius pp 1-21

Yaqub (2010) *"exchange rate changes and output performance in Nigeria: a sectorial analysis"* Pakistan journal of social sciences 7 (5): 380-387, 2010

Yinusa, D.O. (2004), *"Exchange Rate Variability, Currency Substitution and Monetary Policy in Nigeria (1986 -2001)"* Unpublished Ph.D Theses.

Yinusa, D.O. and Akinlo, E. A. 2008.*"Exchange Rate Volatility, Currency Substitution and Monetary Policy in Nigeria"* MPRA Paper No. 16255.

Yinusa, D.O. (2008). *"Between dollarization and Exchange Rate Volatility: Nigeria's Portfolio Diversification Option"*. Journal of Policy Modeling. Vol. 30, Issue 5, Pg. 811-826.