EXCHANGE RATE VOLATILITY AND IMPORT IN NIGERIA

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ABSTRACT

The paper examines the impact of exchange rate fluctuation response on import demand in Nigeria for a period of 35 (1980 to 2014). Apparently, the existence of such effect entails a level of external sector or external price impact on importation in the country. The GARCH estimation model was employed to determine and generate the exchange rate volatility while the Ordinary Least squares econometric method was employed in the analysis of the model. The results from the empirical analysis generally show a weak exchange rate fluctuation effect on importation in Nigeria. More specifically, the findings reveal an insignificant relationship between exchange rate fluctuation and import in Nigeria. As exchange rate varies, importation seems to remain largely unaffected. A leverage effect in future exchange rates exists in the Nigerian context. Exchange rate volatility seems to be persistent in Nigeria. The path to adjustment is oscillatory in nature rather than asymptotic. Real income, general prices and investment expenditure exert positive and significant effects on import demand. Price level is the most elastic factor in import demand. In other words, import demand responds more to price level than other factors in the study. The study recommends among others that there must be a means of linking import demand with the naira exchange rate in Nigeria. When the exchange rate does not have a significant role in import demand function then it becomes difficult for trade regulation to be implemented without resorting to the use of tariffs and quotas.
Keywords: Exchange Rate Volatility, Import, Domestic Price Level, Econometric andStatistical Methods:

INTRODUCTION

The current debate on the most appropriate exchange rate regime/optimal management of exchange rates and its attendant impact on a nation's external trade are on the increase and in the front burner of several economics and financial journals across the globe today. It is argue that increased volatility causes decline in trade growth. Exchange rate volatility is on the increase and poses a serious concern to policy makers in Nigeria since the implementation of the flexible exchange rate era. The place of exchange rate fluctuations on the overall imports of a country cannot be overemphasized; given the fact that a volatile exchange rate could lead to the emergence of different trade adjustment programmes,

culminating to import contractions, discouragement of trade liberalization policy among countries and a sustained balance of payments crisis (Arize and Shwiff, 1998; Arize *et al.*, 2000). Persistent exchange rate volatility increases trade and investment risks which Akpokodje and mojimite (2009) believed enables companies to increase risk premium to their overall cost of goods sold and hence, higher prices and minimize international trade.

Some theories have postulated that exchange rate volatility affect macroeconomic performance, while others concluded otherwise (Stokman and Vlar, 1996; Baek and Okawa, 2001; Shehu, 2009). However, from the point of view of microeconomics, Schabl (2007) argues that exchange rate movement reduces the GDP growth rate by increasing external trade costs and costs of capital flows. From a macroeconomic point of view, it could leads to instabilities and beggar-thy neighbor depreciation practice in the committee of trading partners.

More specifically, there are two main theories seeking to explain the effect of exchange rate movements on trade. These are the partial equilibrium model and the general equilibrium model. According to Polodoo et al (2011), the partial equilibrium approach as advocated by Clark (1973), Hooper and Kohlhagen (1978), Makin (1978), Cushman (1983, 1986) assume that it is not possible for firms to hedge, firms do not like taking risk and major part of their income and expenditures are in foreign currencies which makes exchange rate fluctuation inversely influence the rate of trade. The reason being that companies hardly adjust their output levels due to exchange rate changes because their production processes are well planned in advance to incorporate anticipated changes in exchange rates movement. However, Makin (1978) criticizes Clark's view by arguing that it is very possible for firms to hedge against impact of exchange rate changes on trade. On his part, Cushman (1983 and 1986) argues further that incomplete pass through can partially be used to minimize the effect of exchange rate fluctuations on imports if and only if export price is priced in a weakening currency and the loss arising therefrom are partially offsetted.

The partial equilibrium perspective also argues that while exchange rate volatility may vary, other factors remain the same. On the other hand, the general equilibrium model aknowledges all relevant macroeconomic factors. In this vein, Bacchetta and Wincoop (2000) evolved a model on two countries. Under this model, uncertainty is assumed to come from both monetary, fiscal and technology shocks, trade level and welfare are compared under various exchange rate periods; they concluded that there is no significant relationship between exchange rate and trade.

Now, in view of the above conflicting theories and empirical studies on how exchange rate fluctuation affects imports, we cannot draw a reasonable and acceptable conclusions from them. Also, given the unstable nature of the development of the Nigerian financial system caused by sharp dwindling oil prices and obnoxious and ill-timed government policies, there is the need to examine its impact on the rate of imports/foreign investment growth in Nigeria. The few studies investigated in Nigeria on exchange rate volatility and imports have not received the deserved attention. Hence, the need to determine the relationship between exchange rate movements and imports in Nigeria over time, and to see if there is any exchange rate-led foreign imports growth in Nigeria.

REVIEW OF RELATED LITERATURE
Concepts of Exchange Rates

According to Fernando and Shelly (2012), exchange rates are the price of a particular country's currency in terms of another. It is the ratio at which two currencies are traded for

each other. But Gottheil (2005) submitted that exchange rate is the total units of a particular foreign currency that is exchanged for a given unit of local currency. On their part, Musyoki, Pokhariyal and Pundo (2012) see real exchange rate as an aspects of international macroeconomics and finance where the total number of locally produced goods and services are exchanged for those of other countries. According to Obadan (2012), the place of exchange rate policy and types of exchange rate regime or arrangement in the macroeconomic management of a country, especially the developing countries, cannot be overemphasized. The reasons being that, an appropriate exchange rate determination helps a country to take full advantage of international trading system. Thus, exchange rate policy is the process of determining the rate that is most appropriate for foreign exchange transactions, while an exchange rate regime or arrangement is the system by which the value of home currency is determined vis-à-vis foreign currencies. In determining exchange rate policy, a country's economic structure and institutional characteristics become very crucial. Exchange rate is of two main categories: the fixed exchange rate period and the freely floating rate regime. However, in between these two are variants of exchange rates that tend to approximate the real world situation. The variants of the fixed exchange rate regime are currency peg, adjustable peg, crawling peg and target zone (Obadan, 2012).

Exchange Rate Volatility

Exchange rate fluctuation is the amount of uncertainty in the level of changes in its value. A higher fluctuation indicates that its value can extend out over several values. The implication of this is that, price can fluctuate significantly for a short period in both directions. Where volatility is low, exchange rate will not be significant, but changes in value at a steady pace over a given period. The probability of fluctuations in the rate of exchange constitutes a risk factor in external trade and investment transactions.

In the past few years in Nigeria, exchange rates have been very volatile with an increasing trend. The Central Bank of Nigeria (2014) reports that, the official exchange rate for the US dollar in 2012 was about ₦150 to $1, in 2013 it was ₦165 to $1and while as at May 2014, it stood at about ₦169 to $1. Currently, the exchange rate to a dollar is ₦395 to $1. This shows a weakening Naira from 2012 to 2016 and it is an indication of higher volatility of exchange rates within the period. The fluctuations are caused by several macroeconomic variables as well as the terms of trade, and government debt.

Some Facts about Nigeria's Imports Position

According to the National Bureau of Statistics (2015), Nigeria's imports increased from ₦465091.70 Million in May 2015 to ₦564694.20 Million in June 2015. The average imports in Nigeria between 1981 and 2015 was ₦158248.66 Million, reaching an all-time high of ₦1554732.90 Millions in March 2011 and a record low of ₦167.88 Millions in May 1984. Nigeria's major imports have been in the area of industrial supplies, capital goods, food and beverage, fuel and lubricants, transport equipment and parts and consumer goods. Record have shown that in 2014, total industrial supplies or importation was 27%, capital goods 23%, food and beverage 17%, fuel and lubricants 14%, transport equipment and parts 12% and while consumer goods was 7%. A further breakdown of these figure reveal that out of the total imports in Nigeria, 7% was from Africa, 15% from America, 34% from Europe and while 43% was from Asia. This further shows that the largest imports trading partner with Nigeria is Asia, followed by Europe.

The Empirical Literature

In the empirical literature, several findings have been established by economists and financial scholars on the issue of exchange rate volatility and imports across the globe. In this study however, few of them are reviewed here. For instance, the study of Franke (1990) empirically investigates the effect of exchange rate movement across some selected sectors of an economy such as fishing, mining, manufactured goods, import and export, chemicals and others. The results from the analysis indicate that foreign bilateral trade is particularly sensitive to exchange rate volatility. He concluded that trade (import and export) have a significant relationship with exchange rate volatility. The reason being that at the international trade, trade openness is usually determined by the ratio of imports to exports. The work of Arize and Shwiff (1998) provide fresh evidence on the impact of exchange rate fluctuation on imports in G-7 countries for a period of 23 years (1973 to 1995). Using the cointegration and a single-equation econometric analysis, the results reveal a significant inverse association between exchange rate fluctuation and trade level in all the G-7 countries. In the case of Canada, there was a significant positive relationship.

Barkoulas et al (2002) empirically examine the association between the rate of exchange and the changes in the level of trade flows. They submitted that fluctuations in exchange rate do not allow for increase in trade volume and hence, a reduction in its overall benefits. Even Eichengreen and Leblang (2003) carry out similar investigation in twelve countries for a period of one hundred and twenty years. They find that exchange rate instability is negatively associated with economic growth.

The study of Akpokodje and Omojimite (2009) investigate the impact of exchange rate fluctuation on imports in a flexible exchange rate regime in West African countries for a period of 21 years (1986 to 2006). Using the GARCH model to generate volatility, the results from the empirical analysis reveal a negative association between exchange rate fluctuation and imports in all the West African countries. But a mixed result occurred on the basis of the sub-groupings such that while exchange rate fluctuation has negative relationship with imports in non-CFA countries, its relationship with import was positive in the CFA countries.

In Pakistan, Khan, Azim and Shabib (2014) investigate the relationship between exchange rate movement and trade with trading partners for a period of 40 years (1970 to 2009). Using the GARCH model to generate for volatility and the panel data analysis technique, exchange rate fluctuations (using the U.S dollar as a bench mark with trading partners) significantly affect imports and exports. But when trading with developing countries, exchange rate fluctuations do not affect their imports and exports demand functions.

Eke, Eke and Obafemi (2015) in an empirical manner examine the association between the rate of exchange and trade balance in Nigeria for a period of 43 years (1970 to 2012). Using Johansen test for co-integration and the ECM to analyze the hypothesized relationship, the empirical results indicate that there is a long run relationship between balance of trade and all the hypothesized variables. The analyses also reveal that the rate of exchange has a significant negative effect on balance of trade in Nigeria in the period under investigation. Siing, Mun and Dollery (2012) empirically investigate the linear and nonlinear associations between exchange rate movement and import in the U. S for the periods 1975 to 2009 and 1980 to 2009. They find that the BDS was not i.i.d: the nonlinear causality result on the other hand, reveals that in Malaysia and US, a nonlinear causal relationship do exist. The study of Ghura and Greenes (1993) on the impact of exchange rate misalignment and volatility on the imports and exports of sub-Saharan African countries during 1972 to 1987. Using the panel

data approach, and Gauging exchange rate movement by the coefficient of variation of the real exchange rate; the empirical analysis reveal that exchange rate volatility have a more robust impact on imports than on exports.

Other similar studies in this regard with similar findings across the globe include Cushman (1983), Hooper and Kohlhagen (1978), Caporale and Doroodian (1994), Sekkat (1997), Samanta (1998), Pugh, Tyrrall, Rodecki and Tarnawa (1999), Anderton and Skudelny (2001), Rajan and Siregar (2002)and Agolli (2003).

METHODOLOGY
Framework and Model

The base line formulation of import demand equation relates the amount of import demands to domestic real income and relative prices-ratio of import prices to domestic prices (Gafar 1988). Therefore, the basic import demand function would take the form:

$$M = f(Y\ P_m\ P_d)..(1)$$

Where Mt is the real import demand, Y_n is the nominal income, P_m is the index of price of import in the home currency, and P_d is the price index for locally produced goods. Because of the possibility of the existence of multicollinearity between the two prices in equation one and under the assumption of homogeneity, equation one is usually given by:

$$M_d = f(Y, Pm/Pd)..(2)$$

Where Y is real income and (Pm/Pd) is relative prices, which explains why consumers switch their demand between imports and domestic goods. In line with the extant literature and the Narayan and Narayan (2005) formulations, we divide real domestic income (final expenditure) into consumption expenditure on private and public sectors and investment expenditure. This will allow us to modify equation two into a disaggregate import demand model for Nigeria as follows:

$$M_d = f(Y, P, GCE, INV, EXRTV, RES).. (3)$$

Where :

M_d = imports of goods and service;
EXRTV = exchange rate volatility (measured by a GARCH model)
RY = real GDP;
P = domestic price level (proxied by price deflator);
GCE = government consumption expenditure
INV = total investment expenditure
RES = external reserves

The import model is a demand function that seeks to estimate the responsiveness of import demand to each of the explanatory variables. Hence, in order to obtain direct elasticities, the model is specified in long-linear form, thus:

$$LIMPT = \alpha_0 + \alpha_1 LEXRTV + \alpha_2 LRY + \alpha_3 LP + \alpha_4 LGCE + \alpha_5 LINV + \alpha_6 LRES + U.$$
$$..(4)$$

Where α_0 - α_6 are the parameter to be estimated in the model and U is the stochastic error term with zero mean and constant variance.

In the model in equation (2) above, exchange rate movement is expected to have an inverse relationship with import demand in Nigeria. Fluctuation in exchange rate leads to instability in import prices that can discourage importation, especially in the short run. Real income level, government consumption expenditure, household spending, and investment

are all domestic demand factors. Studies on import demand in Nigeria like Udoh and Eghwaikhide (2008) have shown the relevance of demand factors in import demand in Nigeria. Each of these factors is expected to exert positive impact on import demand in Nigeria since increases in these factors should lead to expansion in aggregate demand which cannot be satisfied by domestic productive capacity. The effect of price level in the country on demand is rather ambiguous. Hence the coefficient of price level can take either positive or negative sign depending on the demand structure in the economy.

Estimation and Data Issues

The ordinary least squares (OLS) technique is used for the estimation of model. Moreover, the GARCH method was used to obtain data on exchange rate volatility in Nigeria. Annual time series data covering the period 1980 to 2014 are used in the analysis.

EMPIRICAL ANALYSIS

This section econometrically investigates the effects of exchange rate volatility on import demand in Nigeria. As presented in the previous section, exchange rate volatility is captured using a GARCH model that helps to report the variances of exchange rate over time. The OLS method was then used to analyze the import demand function that was specified in the previous section which also includes other relevant determinants of imports in Nigeria.

Exchange Rate Volatility Measure

The estimated GARCH equation for exchange rate volatility is shown in table 4.1. In the mean result of the estimates, the coefficient of lagged exchange rate is significant at the 5 percent level and is positively signed, suggesting that previous exchange rate behaviour tends to produce positive or depreciation changes on the naira exchange rate. The coefficient is greater than one and implies that adjustments in exchange rate does not follow an asymptotic path, rather the movement is oscillatory in nature.

In the variance equation, all the coefficients of the terms are significant at the 1 percent level. The mean and ARCH terms are positive, while the ARCH and the leverage terms are negative. The positive ARCH term indicates that news from previous periods are transmitted into the current period behaviour of exchange rate. The significant GARCH term confirms volatility of the exchange rate while the leverage term shows that there appears to be asymmetric effects in exchange rate movements. This indicates the existence of a leverage effect in future exchange rates during the sample period; information on depreciation of the naira exchange rate is seen to be more destabilizing in the exchange rate market since γ is significantly different from zero.

Table 4.1: Estimation of Exchange Rate Volatility

Mean Equation			
Variable	Coefficient	z-Statistic	Prob.
C	0.874	4.893	0
EXRT(-1)	1.043	117.43	0
Variance Equation			
Ω	2.193	2.897	0.004

ARCH	2.176	5.660	0
GARCH	-0.91	-3.178	0.002
Γ	-0.349	-2.945	0.003
R-squared = 0.945		Ad. R-squared = 0.9196	

Author's computation 2015 from Eview 8.0

Exchange Rate Volatility and Import Demand

The results of the estimated model are presented in table 4.2 below. In the results, the coefficients of LRES and LGCE do not seem to possess the signs in line with a priori determination. All the other coefficients have the correct *a priori* signs. More importantly, we focus on the individual significance of the coefficients. The result shows that only the coefficient of exchange rate volatility does not pass the significance test. All the other coefficients pass the significance test. The failure of the exchange rate volatility coefficient suggests that volatility of exchange rate does not predict import demand behaviour in Nigeria. As the exchange rate fluctuates, the demand for import seems to remain largely unchanged. The implication of this outcome is that import demand is inelastic with respect to exchange rate variation. This result strongly underscores the critical dependence of the economy on importation in Nigeria. Most capital and consumption goods are largely import-based in Nigeria.

The coefficients of real income and gross investment are positive and significant, showing that rising income in the country leads to increase in importation, while a higher investment demand would generate increased demand for imports in Nigeria. Considering that these factors are aggregate demand components, these results suggest the very strong effect of domestic demand components on import demand in Nigeria. Essentially, this demand patterns can easily undermine the role of exchange rate (and its volatility) on import demand in Nigeria.

In the same vein, rising domestic price levels also seem to give rise to increased demand for import in Nigeria. Indeed, the price level has the highest elasticity since it shows that a one percent rise in prices leads to a 0.8 percent increase in import demand in Nigeria. This is a major symptom of the poor productive capacity in the economy, namely, turning to foreign demand when domestic prices are rising. The coefficient of government consumption expenditure is rather pervasive as it indicates a negative effect on import demand in Nigeria.

The DW statistics value of 2.02 shows the absence of autocorrelation in the model. Thus, the data used in this study seem to be free of linear dependence in its error. The results report very impressive goodness of fit for the model. The R-squared value of 0.991 indicates that over 99 percent of the systematic variations in import demand at any given time is explained by the five explanatory variables. The adjusted R-squared value is also very high and it indicates that the model has very high prediction ability. The F-value of 446.5 is very high and passes the significance test even at the 1 percent level. Indeed, we cannot reject the hypothesis of a significant long-linear relationship between import and all the independent variables combined.

Table 4.2: Import Demand Result

Variable	Coefficient	t-Statistic	Prob.
C	2.349	0.649	0.523
EXRTV	0.002	0.377	0.7097
LRY	0.589	3.118	0.0045**
LRES	-0.175	-2.757	0.0107**
LPRICE	0.823	5.224	0.0000*
LGCE	-0.563	-2.013	0.0550**
LINV	0.525	2.456	0.0213**
R^2 = 0.991	F = 446.5	D.W. = 2.02	

Author's computation 2015 from Eview 8.0 Note: *sig. at 1% level; ** sig. at 5% level

CONCLUSION AND POLICY RECOMMENDATIONS

The study so far examines the role of exchange rate fluctuations on import demand in Nigeria. Econometric tools were employed in the analysis for the period 1980 to 2014. The GARCH estimation model was used to determine the exchange rate fluctuation while the Ordinary Least squares estimations technique was employed in the estimation of the model.

The results have shown that exchange rate variations do not drive import demand in Nigeria; rather it is factors like prices and income levels that are important predictors of import behaviour in Nigeria. This has once again buttressed the argument that the Nigerian economy is highly dependent on importation for both capital and consumer needs. This is a strong area that the policy makers must seek to rectify in the country through appropriate adjustment processes. An exchange rate inelastic import demand regime portends a menace to a country's external balance and fiscal management processes since it can easily develop into unwarranted external debt conditions.

The findings made in the study give impetus for certain recommendations.
First, there must be a means of linking import demand with the naira exchange rate in Nigeria. When the exchange rate does not have a significant role in import demand function then it becomes difficult for trade regulation to be implemented without resorting to the use of tariffs and quotas. Trade deficits adjustments should focus on expenditure-reducing policies which have been shown to be more effective than exchange rate policy. This is because the significant impact of the demand components on import demand could actually stimulate the inability of the exchange rate policy and thus, extensively influence import demand. Moreover, government should provide the enabling environment that will enhance domestic productive capacity so as to minimize imports of goods, especially in areas where the country has comparative advantage. For instance, most agricultural goods are better-off produced in Nigeria than relying on importation for its supply.

REFERENCES

Agolli, M (2003). Exchange rate volatility effect on trade variations. Albanian Center forInternational Trade. http://pdc.ceu.hu/archive/00002085/.

Akpokodje, G & Omojimite, B. U (2009). The effect of exchange rate volatility on the importsof ECOWAS Countries, The Social Sciences Journal, 4(4), 340-346

Anderton, R & Skudelny, F (2001). The impact of exchange rate volatility on euro area imports, European Central Bank Working Paper Series. Retrieved 07/12/15http://ideas.repec.org/p/ecb/ecbwps/20010064.html.

Arize, A. C & Shwiff, S. S (1998). Does exchange-rate volatility affect import flows in G-7countries? evidence from cointegration models, Applied Economics, 30, 1269–1276

Arize, A.C., Osang, T & Slottje, T (2000). Exchange rate volatility and foreign trade: Evidence from Thirteen LDCs. Journal of Business and Economic Statistics, 18(1), 10-17.

Baek, I.M & Okawa, T. (2001). Foreign exchange rates and Japanese foreign direct investmentin Asia. Journal of Economics and Business, 53, 69-84.

Barkoulas, J.T., Baum, C & Caglayan, M (2002). Exchange rate effect on the volume and variability of trade flows, Journal on International Money and Finance, 21, 481-406.

Barungi, B., Ogunleye, E & Zamba, C (2015). Nigerian economy. Retrieved on 11/12/2015from AfricanEconomicOutlook.org

Caporale, T & Doroodian, K (1994). Exchange rate variability and the flow of internationaltrade, Economics Letter, 46, 49-54.

Central Bank of Nigeria (2014). Monetary policy

Cushman, D.O (1983). The effects of real exchange rate risk on international trade, Journal ofInternational Economics, 15, 43-63.

Cushman, D.O. (1986). Exchange rate uncertainty and foreign direct investment in the UnitedStates, Weltwirtschaftliches Archiv 124(2), 322-334.

Eichengreen, B & Leblang, D (2003). Exchange rates and cohesion: historical perspectives and political-economy considerations, Journal of Common Market Studies, 41, 797–822.

Eke, I. C., Eke, F. A & Obafemi, F. N (2015). Exchange rate behaviour and trade balances inNigeria: an empirical investigation, International Journal of Humanities and Social Science, 5(8), 71-78.

Fernando, Q & Shelly, T (2012). Principles of macroeconomics, Pearson Education Inc.

Franke, G (1991). Exchange rate volatility and international trade, Journal of International Money and Finance, 10, 292-305.

Gafar, J. S (1988). The determinants of import demand in Trinidad and Tobago: 1967-84, Applied Economics, 20, 303-313.

Ghura, D & Grennes, T (1993). The real exchange rate and macroeconomic performance in Sub-Saharan Africa, Journal of Development Economics 42, 155-174.

Gottheil, F. M (2005). Principles of macroeconomics, Fourth Edition, Thomson Publishing,

Hooper, P & Kohlhagen, S (1978). The effect of exchange rate uncertainty on the prices and volume of international trade, Journal of International Economics, 8, 483-511.

Khan, A. B., Azim, P & Shabib, H. S (2014). The impact of exchange rate volatility on trade: a panel study on Pakistan's trading partners, The Lahore Journal of Economics, 19, 131–66.

Musyoki, D., Pokhariyal, G. P & Pundo, M (2012). Real exchange rate volatility in Kenya. Journal of Emerging Trends in Economics and Management Sciences (JETEMS) 3 (2): 117-122,

Narayan, S & Narayan, P. K (2005). An empirical analysis of Fiji's import demand function, Journal of Economic Studies, 32(2), 158 - 168

National Bureau of Statistics (2015). Nigeria's imports. Retrieved on 11/12/2015 from www.tradingeconomics.com

Obadan, M. I (2012). Foreign exchange market and the balance of payments: elements, policies and Nigerian experience. Goldmark Press Limited, Abuja and Benin City.

Pugh, G., Tyrrall, D., Rodecki, P & Tarnawa, L (1999). Exchange rate variability, international trade and monetary cooperation in Europe: Some quantitative evidence for the single currency debate, mimeo. http://ideas.repec.org/p/wuk/stafwp/98-9.html.

Rajan, S.R & Siregar, R (2002). Impact of exchange rate volatility on Indonesia's trade performance in the 1990s, Centre for International Economics Studies CIES Discussion Paper 0205. http://ideas.repec.org/a/eee/jjieco/v18y2004i2p218-240.html.

Samanta, S (1998). Exchange rate uncertainty and foreign trade for a developing country: an empirical analysis, Indian Economic Journal, 45: 3-3.

Sekkat, K (1997). Exchange rate variability and EU trade, Final Report to the Commission of the EU DGII. 2nd Version.

Shehu, A.A (2009). Impact of foreign exchange volatility on imports: a case of Nigerian

Siing, W. Y.,Mun, H. C&Dollery, B. E. (2012). Impact of exchange rate volatility on import flows: The case of Malaysia and the United States. Applied Financial Economics, 20(3), 255-264.

Stokman, A.C.J. & Vlar, P.J.G. (1996). Volatility, international trade and capital flows, Amsterdam,

Udoh, E & Egwaikhide, F.O (2008). Exchange rate volatility, inflation uncertainty and foreign direct investment in Nigeria, Botswana Journal of Economics, 5(7), 14-31.

Bacchetta, P & Van-Wincoop, E (2000). Does exchange rate stability increase trade and welfare? The American Economic Review, 90(5), 1093-1109,

Makin, J. H (1978). Portfolio theory and the problem of foreign exchange risk, Journal of Finance, 33, 517-34.

Clark, P. B (1973). Uncertainty, exchange risk, and the level of international trade, Western Economic Journal, 11(3), 302-313.

Schnabl, G (2007). Exchange rate volatility and growth in small open economies at the EMU periphery, 1561081-9 771561

Polodoo, V., Seetanah, B & Padachi, K (2011). Exchange rate volatility and macroeconomic performance in small island developing states a paper presented at the Uom-Wcp International Conference at Le Meridien, Mauritius on 22 December 2011, 1-21.

Hooper, P & Kohlhagen, S. W (1978). The effect of exchange rate uncertainty on the prices and volume of international trade, Journal of International Economics, 8(4), 483-511.