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Accessing Oil Price Shocks AndExchange Rate Volatility in Nigeria

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ABSTRACT:
The recent fall in the price of crude oil in the international market is sending economic and political shocks around the world. The hardest hit has been countries like Nigeria whose economies depend largely on oil for appreciable percentage of their foreign exchange earnings. The study examined the effects of oil price shocks on exchange rate volatility in Nigeria using monthly data covering the period 1986:01 to 2015:11.The GARCH models employed are GARCH, PARCH and EGARCH, based on normal, student-t and GED distribution respectively. The study found out that real exchange rate fluctuation in Nigeria is significantly influenced by oil price fluctuations and a strong positive correlation between exchange rate return and future oil price volatility. We therefore recommend that any policy to address the issue of exchange rate fluctuations in Nigeria should give priority attention to oil price fluctuation of the variables as this will help to enhance the real exchange rate in Nigeria.

1.INTRODUCTION

Over the years, crude oil is arguably the most influential physical commodity in the world and frequently considered as an important macroeconomic indicator that influences the stock market, aggregate demand, and real economic growth in both developed and developing countries. Oil price fluctuations might affect the global economy through a variety of channels, including transfer of wealth from oil consumers to oil producers, a rise in the cost of production of goods and services, and impact on inflation, consumer confidence, and financial markets. On the other hand, getting the exchange rate right in a developing country has turned out to be one of the main challenges faced by macroeconomic policy design in recent times(Omojimite, 2011).This challenge is magnified by the adoption of World Bank/ IMF inspired Structural Adjustment Programme/ deregulation packages that were implemented in many of these countries. Edwards (1994) also noted that real exchange rate behaviour occupies a central role in policy evaluation and design especially in the less developed countries. Since the real exchange rate is the price of foreign goods in terms of domestic goods, the real exchange rate plays a crucial role in guiding the broad allocation of resources in the domestic economy between foreign and domestic goods. It also signals inter-sectoral growth in the long-run and acts as a measure of international competitiveness. Sharp increases in the international oil prices and the violet fluctuations of the exchange rate are generally regarded as the factors of discouraging economic growth (Jin, 2008).There are various evidences, particularly over the post-Breton woods era, pointing to the vital role of oil price fluctuations in the determination of the path of the exchange rate" (Adeniyi et al, 2004). According to Krugman (1983), exchange rate appreciates in response to rising oil prices and depreciates with response to falling oil prices in oil exporting countries, while the opposite is expected to be the case in oil importing countries.

The recent fall in the price of crude oil in the international market is sending economic and political shocks around the world. The hardest hit has been countries like Nigeria whose economies depend largely on oil for appreciable percentage of their foreign exchange earnings. This surge in oil prices has been raising questions on its implications for global imbalances and needs of policy adjustments. The crude oil price and exchange rates are key research subjects, and both variables generate considerable impacts on macroeconomic conditions such as economic growth, international trade, inflation, and energy management. The relationships between the two have been studied, mainly for guidelines of interaction and causality. In past decades, changes in the price of crude oil have been shown to be a key factor in explaining movements of foreign exchange rates, particularly those measured against the U.S. dollar (Huang and Tseng, 2010).

While a considerable amounts of studies have dealt with some aspect of the relationship between international oil price and exchange rate, a number of questions still spring to mind namely: Is there a role of oil prices in exchange rate determination in Nigeria, Do positive and negative shocks to oil prices volatility have symmetric effect on exchange rate volatility? Among other questions (Adeniyi, Omisakin, Yaqub and Oyinlola, 2012).

The purpose of this paper is to explore the direction of oil price volatility and exchange rate fluctuations, and to investigate the dynamic relationship between them.The rest of the paper is mapped out as follows. Section 2 presents related literature and theoretical perspective. Section 3 is the methodology of the paper, following by section 4 interpretation of the empirical result, section 5 is the conclusion of the paper.

2.THEORITICAL AND LITERATURE REVIEW

Different theoretical relationships between oil prices and exchange rates have been established in the literature with causalities going in both directions. The recent global economic crisis has added to exacerbate these imbalances, while the price fluctuations have been associated with U.S. dollar depreciation and appreciation at all times have again placed the oil – macro economy issues under the spotlight, a focus of which is on the relation between real effective exchange rate and real oil price. This relation stems from the argument that oil price variations are a source of real shock that explain the behavior of real effective exchange rate (Zhou, 1995). Arguably, the relation between the two variables can be either positive or negative. Building upon the purchasing power parity assumed to hold for tradable goods prices, Chen and Chen (2007) note that a rise in oil price results in the increase in relative tradable goods price of a domestic country by a greater proportion than that of foreign countries. As a result, the domestic currency depreciates. Moreover, as the oil price shocks worsen the term of trade, the domestic country may further depreciate the currency. By contrast, as argued by Darby (1982), the inflationary effect of oil price increase more likely will be matched by interest rate hike leading to appreciation of the domestic currency. Indeed, the appreciation effect of real effective exchange rate has been noted as a necessary condition for the ―Dutch disease‖ in the case of oil-exporting countries (Mohammadi and Jahan-Parvar, 2010).

The potential importance of the price of oil for exchange rate movements has been noted by, inter alia, Krugman (1983a,b) and Golub (1983). Although the models these authors present are intuitively appealing, to our knowledge very little work has carefully examined whether a stable link exists between oil prices and the U.S. exchange rate. Advances in econometric techniques for analysing non-stationary series made in the last few years also make a re-examination of the stylized facts seem worthwhile.

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Diverse theoretical relationship between oil price and exchange rates have been established in literature (Beckmann and Czudaj 2012). Oil price fluctuations have received significant considerations for their believed role in macroeconomic variables. The consequences of large increases in the oil price on macroeconomic variables have been of great concern among economist and policy makers as well as the general public, since two major oil price shocks hit the global economy in the 1970s (Sill 2009).

The thought that exchange rate is the most difficult macroeconomic variable to model empirically is debatable. Many papers have suggested that oil price might have a significant influence on exchange rate. The proposition that oil price might be adequate enough to explain all the long run movements in real exchange rate appears to be new (Al-Ezzee, 2011).

Nigeria like among other low income countries has adopted two main exchange rate regimes for the purpose of gaining balance both internally and externally. The purpose for this different practice is to maintain a stable exchange rate (Umar and Soliu 2009). A fluctuating real exchange rate as a result of adverse fluctuation stemming from volatile oil prices are damaging to non – oil sector, capital formation

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and per capita income (Serven and Solimano 1993 and Bagella 2006).

The consequences of substantial misalignments of exchange rate can lead to shortage in output and extensive economic hardship. There is reasonably strong evidence that the alignment of exchange rate has a substantial influence on the rate of growth of per capita output in low income countries (Isard 2007).

According to Trung and Vinh (2011) there are two reasons why macroeconomic variables should be affected by oil shocks. First, oil increase leads to lower aggregate demand given that income is redistributed between net oil import and export countries. Oil price spikes could alter economic activity because household income is spent more on energy consumption and firms reduce the amount of crude oil it purchases which then leads to underutilization of the factors of production like labor and capital. Second, the supply side effects are related to the fact that crude oil is considered as the basic input to production process. A rise in oil price will lead to a decline in supply of oil because of the rise in cost of crude oil production which will lead to a decline in potential output.

For various reasons known and unknown, oil price increases may lead to significant slowdown in economic growth. Five of the last seven United States of America recessions were preceded by significant increases in the price of oil (Sill, 2009). A factor discouraging economic growth is sharp increases in the international price of oil (Jin, 2008).

Analysis of the impact of asymmetric shocks caused by exchange rate and oil price variability on economic growth has been a major concern of both academics and policy makers for a long time now (Aliyu 2009). According to Amano and Norden (1998) many researchers suggest that oil fluctuations has a significant consequence on economic activity and the effect differ for both oil exporting countries and oil importing countries. It benefits the oil exporting countries when the international oil price is high but it poses a problem for oil importing countries.

According to Plante (2008) theoretically immediate effect of positive oil price shocks is the increase in the cost of cost of product for oil importing countries , this is likely to reduce output and the magnitude of the depends on the demand curve for oil. Higher oil prices lower disposable income which then leads to a decrease in consumption. Once the increase in oil price is believed to be permanent, private investments will decrease. But if the shocks are perceived as persistent oil is used less in production, the productivity of labor and capital will decline and potential output will fall.

Some researchers have carried out research the issue of oil price and exchange rate further. According Rickne (2009) political and legal institutions affect the extent to which the real exchange rate of oil exporting countries is affected by international oil price shocks. In a theoretical model strong institutions protect real exchange rate from oil price volatility by generating a smooth pattern of fiscal spending over the price cycle. Empirical analysis carried out on 33 oil exporting countries show that countries with high bureaucratic quality and strong and impartial legal system have real exchange rate that are affected less by oil price. Also according to Mordi and Adebiyi (2010) the asymmetric effect of oil price changes on economic activity is different for both oil price increase and oil price decrease. Patti and Ratti (2007) shows that oil price increases have a greater influence on the economy than a decrease in oil price.

Korhonen and juurikkala (2007) showed that increasing crude oil prices cause a real exchange rate appreciation in oil exporting countries and this is not shocking, since they earn a significant amount from oil exportation. There is also a significant relationship between real oil prices and real exchange rates for oil importing countries; evidence has been seen for Spain (Camarero and Tamant 2002).

A study carried out on the Russian economy by Spatafora and Stavrev (2003) confirm the sensitivity of Russia’s equilibrium real exchange rate to long run oil prices. Likewise, Suseeva (2010) verified a long run positive relationship between the real oil price and the real bilateral exchange rate against Euro in Russia. Lizardo and Mollick (2010) provided proof that between the year 1970s to 2008, movements in the value of the U.S dollar against major currencies was significantly explained by oil prices. They found that when oil prices group currencies of oil importers such as china suffer depreciation. On the other hand, in net oil exporters such as Canada, Mexico and Russia increase in oil prices leads to a noteworthy depreciation of the US dollar. But, Akram (2004) finds strong evidence of no linear relationship between oil prices and the Norwegian exchange rates.

Using Blanchard – Quah identification strategy Clarida and Gali (1999) estimate the share of exchange rate fluctuations

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that is due to the different shocks in oil. Using quarterly data from 1974 to 1992 comparing the United States of America to four different countries (Germany, United Kingdom, Japan and Canada) they found that more than 50% of the variance of real exchange rate changes over all the horizons was caused by real oil shocks. Amano and Norden (1998) using data on real effective exchange rates for Germany, Japan and United States of America discovered that real oil price is the most important factor in determining real exchange rates in the long run.

An advance in the productivity of tradable relative to non-tradable if larger in other countries could lead to the appreciation of the real exchange rate. This is the Balassa-Samuelson hypothesis formulated by Balassa (1964) and Samuelson (1964). According to Coudert (2004), the Balassa-Samuelson effect is the mechanism by which an appreciation of the real exchange rate occurs owing to changes in relative productivity. We use the real oil price as a representation of the terms of trade and examine the influence of oil price fluctuations and productivity differentials on the real exchange rate given that oil price is the main export good driving the terms of trade in oil exporting countries. In practice, the price of the main exported good is often used as an indicator of the terms of trade (Sossounov and Ushakov, 2009).

Using a panel of 16 developing countries Choudhri and Khan (2004) provided strong evidence of the workings of the Balassa Samuelson effects. Coudert (2004) survey provided evidence that the trend appreciation in the real exchange rate observed in countries of central and Eastern Europe during the early 2000 stemmed in fact from a Balassa effect. The writer noted that even though other factors were just as responsible, the estimated Balassa effect goes some way in explaining the real appreciation.

Kutan and Wyzan (2005) using an extended version of the Balassa-Samuelson model finds evidence that changes in oil prices had a significant effect on the real exchange rate during 1996 to 2003 and that the Balassa- Samuelson working through productivity changes may be present though its economic significance may not be large.

Cashin et al (2004) carried out a study on over 50 commodities exporting developing countries and he finds along-run relationship between exchange rate and the exported commodity's price in one third of their sample. In a recent study, Ozsoz and Akinkunmi (2011) also demonstrated the positive effects of international oil prices on Nigeria's exchange rate.

Using monthly panel of G7 countries Chen and Chen (2007) investigate the long run relationship between real oil price and real exchange rates and they found that real oil prices is a dominant cause of real exchange rate movements. Olomola (2006) investigated the impact of oil price shocks on aggregate economic activity in Nigeria. Using quarterly data from 1970 to 2003. He discovered that contrary to previous empirical findings, oil price shocks do not affect output and

3.METHODOLOGY AND DATA SOURCES

Monthly data from January 1986 to November 2015 on crude oil price and the naira-dollar exchange rates are obtained from the databases of the Organisation of Petroleum Exporting Countries (OPEC) and the Central Bank of Nigeria (CBN) respectively. For the exchange rate we use the official exchange rate of the naira vis-à-vis the US dollar, while the daily prices of Nigeria"s Bonny Light crude benchmark was adopted as the oil price variable. In this study, nominal data is used as the inaccessible daily consumer price index precludes the option of working with real values. One therefore takes solace on the premise that tracking the daily movements in oil prices and exchange rate does not require information about their real values (Oluwatosin et.al, 2012). We also tried to avoid the nonsynchronous trading problem by using only trading dates which match for both the oil and foreign exchange markets. This study considers the returns on daily oil prices and exchange rate obtained via the ensuing computation:

$$r_t = \log\left(x_t / x_{t-1} \right) = \log(x_t) - \log(x_{t-1}) \quad (1)$$

where x_t and x_{t-1} are nominal exchange rate and oil price for period and in that order. The daily returns on oil prices and exchange rate are henceforth denoted by and respectively.

Following the approach in Narayan et.al (2008) and Ghosh (2011) we characterise the linkage between oil prices and exchange rate with the aid of GARCH (p,q) and EGARCH (p,q) models. The mean equation is given by

$$rer_t = c + \alpha oilp_t + v_t \qquad (2)$$

where v_t is the white noise residuals $N(0, \sigma_t^2)$. In terms of the second moment, the variance equation for the GARCH (p, q) is of the form

$$\sigma_t^2 = \theta + \sum_{i=1}^{p} \phi_i v_{t-i}^2 + \sum_{i=1}^{q} \phi_i \sigma_{t-j}^2 \qquad (3)$$

Where the conditions $\theta > 0$, $|\phi_1| < 1$, and $(1 - \phi_1 - \varphi_1) > 1$ hold in the case of a GARCH (1, 1) model.

Equation (3) expresses the conditional variance as a linear function of p lagged squared disturbances and q lagged conditional variances. In other words, volatility today depends upon the volatilities for the previous q periods and upon the squared residual for the previous p periods. Often GARCH models with small values of p and q do a very good estimate of volatility with the $p = q = 1$ case sometimes being adequate (Narayan et. al, 2008; Ghosh, 2011). In a similar vein, the EGARCH model which allow for oscillation in the conditional variance can be written as

$$\log(\sigma_t^2) = \omega + \sum_{i=1}^{p} \alpha_i \left| \frac{\mu_{t-i}}{\sigma_{t-i}} \right| + \sum_{k=1}^{r} \lambda_k \frac{\mu_{t-i}}{\sigma_{t-i}} + \sum_{j=1}^{q} \beta_j \log(\sigma_{t-j}^2) \qquad (4)$$

The parameters of (4) include ω the mean of the volatility equation, the size effect α which is suggestive of the magnitude of the increase in volatility regardless of the direction of shock. The estimate of β captures the persistence of shocks and λ is the sign effect.

Based on the methodology so far used, it is however still difficult to know whether oil price shock has asymmetric effect on exchange rate in Nigeria. To overcome this difficulty, it is necessary to employ the asymmetric price specification proposed by Mork (1989) in Mendoza and Vera (2010) modelswhere the positive and negative price changes jointly is modeled as follows;

$$O^+ = \begin{cases} 0 \; if & O_+ \leq 0 \\ O_+ \; if & O_+ > 0 \end{cases} \qquad (5)$$

Where O_+ is the rate of change of nominal oil price in time t .

Alternatively, Lee, Ni and Ratti (1995) and Hamilton (1996) in Mendoza and Vera (2010), observed that oil price increases after long periods of price stability havemore dramatic consequences than those that are merely corrections to greater oil price decreases during the previous quarter. Their specification of the shock variable is referred to as SOPI (scaled oil price increase). The model is expressed as;

$$O_t^R = \begin{cases} 0 \; if & \frac{o_t^r}{\sqrt{h_t}} \leq 0 \\ \frac{o_t^r}{\sqrt{h_t}} \; if & \frac{o_t^r}{\sqrt{h_t}} > 0 \end{cases} \qquad (6)$$

Where O_t^R is the real oil price shock (OILPSHOCK); o_t^r is the percentage in the price of oil (%OILP) and $\sqrt{h_t}$ is now estimated from (4) which gives following EGARCH(1,1):

$$h_t = \omega + \sum_{i=1}^{p} \alpha_i \left| \frac{\mu_{t-i}}{\sigma_{t-i}} \right| + \sum_{k=1}^{r} \lambda_k \frac{\mu_{t-i}}{\sigma_{t-i}} + \sum_{j=1}^{q} \beta_j h_{t-1} \qquad (7)$$

Applying the above, we would capture how fluctuations in exchange rate responds to increase or decrease in the price of oil for the periods under study.

4. EMPIRICAL RESULTS

In this section, we provide empirical results for the study on oil price - exchange rate volatility in Nigeria using the GARCH model. The results are presented as below:

4.1: *Descriptive Analysis*

In order to determine the distributional properties of exchange rate and oil prices as well as their volatility,

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thedescriptive statistics are presented. The summary statistics for the series are shownin Table 1 below. The average price of exchange rate for the period is 88.98 while that of oil prices is 42.68. The average positive and negative oil price shocks are 1.33 and -1.26 respectively. The net oil price also shows an average of -3.06. Exchange rate priceshave the highest volatility figure of 60.46, though positive oil price volatility has the highest skewness value. This shows that though exchange rate prices have varied more rapidly, oil price volatility were more scattered around the mean. The Jarque-Bera (J-B) statistic which may be used to test normality reveals that the hypothesis of normality is rejected for each of the variables by applying the Chi-Square distribution testing.Further evidence on the nature of deviations from normality may be gleaned from the sample skewness and kurtosismeasures. While skewness of each series is always very close to zero (oil price volatility), the kurtosis is very large,especially for the volatility figures. This feature of the kurtosis, which measures the magnitude of the extremes, is quiteinteresting.

Table 1: Summary Statistics of Volatility

Variable	ROP	EXCH	ROP+	ROP-	NETROP
Mean	42.68	88.98	1.33	-1.26	-3.06
Maximum	132.55	198.34	13.72	0.00	7.88
Minimum	9.88	2.00	0.00	-26.60	-61.72
Std. Dev.	32.75	60.46	2.20	3.01	7.77
Skewness	0.99	-0.25	2.32	-4.29	-5.04
Kurtosis	2.58	1.65	8.93	26.11	34.03
Jarque-Bera	61.92	30.84	845.71	9069.67	15875.86
p-value	0.000	0.000	0.0000	0.0000	0.0000

As the oil price return series shows a strong departure from normality, all the models will be estimated with Student t as the conditional distribution for errors. The estimation will be done in such a way as to achieve convergence.

4.2: Unit Root Tests

Unit root test is carried out to determine if the variables are stationary and if not, to determine their order of integration (i.e. number of times they are to be differenced to achieve stationarity). In standard econometric analysis of the data used in research, a stationary test was carried out; this is due to the fact that most time series data are non-stationary. The Augmented Dickey Fuller test (ADF) test for unit roots and the Phillips Perron (PP) test were conducted for at the time series employed in the study. The Augmented Dickey Fuller (ADF) result and the Phillips Perron (PP) test show that both EXCH and ROP are all integrated series of order I (1). The results are shown in tables 2.

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Variables	Levels				First differences			
	ADF1	PP1	ADF2	PP2	ADF1	PP1	ADF2	PP2
EXCH	-0.2516	0.1017	-2.5688	-2.2835	-15.1863**	-15.0789**	-15.1761**	-15.0658**
ROP	-2.0319	-1.2772	-3.1349	-2.2597	-11.8400**	-11.3315**	-11.8303**	-11.3156**
ROP+	-13.0836**	-14.2823**	-14.0730**	-14.3181**	-11.3633**	-97.0668**	-11.3469**	-98.0407**
ROP-	-9.6785**	-9.7143**	-10.1326**	-9.6582**	-12.0033**	-66.1574**	-11.9842**	-66.3974**
NETROP	-6.4146**	4.6381**	-6.4619**	-4.5778**	-10.5553**	-34.9271**	-10.5423**	-35.2566**

Table 2: Unit Root test Result

Source: Authors' computation. Note ADF1, PP1 measured without trends while ADF2, PP2 were measured with trends*,** imply significant difference at 5 and 1 percent respectively

4.3 : ARCH/GARCH Estimation Results of Mean and variance equations

In this section we present our empirical results for the full sample over the period January 1986-November 2015.All coefficients of the real oil price in the mean equation are negative in all the models except the EGARCH model. As shown in Table 3, the parameters, (ω) and (α) conditional variance equations, are all positive and significant at 1% level under Normal, student-t and GED distribution for ARCH modelthereby satisfying the necessary and sufficient conditions for ARCH family models, that , $\omega > 0, \alpha > 0$, Also, the asymmetric specification reveals that all the three specifications are significant (Positive oil price, Negative oil price and Net-oil price) in all the three methods.

The GARCH (1,1) models for the three methods all satisfy the covariance stationary condition that $\alpha + \beta < 1$. For Normal and GED distributions, only positive oil price is significant at 5% level while negative oil price and netoil price are significant in GED distribution. from GARCH (1,1) normal, student t and GED distribution model reveals that the ARCH term (-0.0014), (-0.0040) and (0.0973) are insignificant at 5% level, while coefficient of the GARCH term β are both positive though insignificant. As in many empirical applications of GARCH (1,1) models, our estimates of student-t and GED distribution are close to zero. Furthermore, positive and net oil price specifications show a negative relationship with exchange rate in all the three distributions while negative oil price reveals a positive relationship with exchange rate.

Most of the parameter's estimates of the EGARCH(1,1) model in Table 3 are statistically significant at a 5% level (by considering t-statistic in parenthesis). The estimates of ω are all negative and considerably smaller than the sample variances shown in theTable. This is due to the changing conditional variances over time and their eventual contribution to unconditional variances. Our results also indicate that the persistence in volatility, as measured by the sum of α and β in the EGARCH(1,1) model, ranging from 0.5099 to 0.8767 with an average of 0.677 suggesting a strong presence of ARCH and GARCH effects. Furthermore, the γ coefficient of the normal distribution is significant also at 5% levels. This shows that there is a positive correlation between the past exchange rate return and the future volatility of exchange rate return to oil price · The EGARCH is covariance stationary in all the three distributions since $\alpha + \beta < 1$.

As for the PARCH model, under student-t and GED distribution, we find the impact of news on returns volatility is asymmetric: the parameter γ of the conditional volatility equation is positive and significant at 1% level, indicating that negative shocks (bad news) has larger impact on exchange rate volatility than positive shocks (good news) of the same magnitude. The impact of asymmetric oil price specification are all significant with normal distribution. The PARCH is also covariance stationary in all the three distributions.

5. CONCLUSION AND POLICY IMPLICATIONS

This paper examined the oil price- exchange rate volatility for Nigeria using monthly observation spanning the period from January, 1980 to November, 2015. We used the ARCH, GARCH, EGARCH and PARCH models to gauge the influence of oil prices on the nominal exchange rate. We also considered different distributions of each model and also external shocks caused by various oil price specifications.

The Augmented Dickey Fuller (ADF) and the Phillips Perron (PP) tests were used to find out if the variables were stationary and to what degree. The variables where then found to be stationary at first difference.In the entire period, we can find clear evidence of skewness and kurtosis in all three oil price specifications. Consequently, none of the returns is normally distributed. Therefore, a more sophisticated distribution with fat-tailed and leptokurtic features is required to describe these returns. Volatility persistence, asymmetric and clustering properties of oil price on exchange rate are also investigated. It is found that the oil price returns series on exchange rate show high persistence in the volatility and clustering properties. The study further, reveals that though most of the movements in real exchange rate is due to changes in the permanent components, dynamic short run impact of oil price volatility on exchange rate does not hold. This may be due to the fact that transactions on crude oil are not primarily carried out using the naira and so the fluctuation in prices may not be easily transmitted to the naira exchange rate in the short run.

It is recommended that exchange rate management policies should focus on foreign exchange demand strategies and in addition, incorporating the movement of international oil prices into exchange rate management, as Nigeria remains an oil dependent economy.The consequences of oil price shocks on the economy are real since oil remains the major foreign exchange earner for the country. Nigeria government should therefore look for new ways to diversify the economy into, from dependence on oil and explore other sectors like manufacturing sector and agricultural sector to reduce the effect of uncertainties in the economy. Finally, higher revenue gotten from increases in oil prices should be invested into different areas of the economy as the exchange rate of a country is influenced by prevalent economic conditions.

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