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EXCHANGE RATE AND PRIVATE SECTOR INVESTMENT IN NIGERIA

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ABSTRACT

The strong influence of exchange rates on investment and other macroeconomic variables makes it one of the most important phenomena in an open economy such as Nigeria. Exchange rate is one of the economic indicators which directly affect investment in Nigeria; as such its role in the overall economic objectives cannot be underestimated. The naira exchange rate has exhibited the features of continuous depreciation and instability since 1986, when the market determined exchange rate system was introduced in Nigeria via the second tier foreign exchange market. This instability and continued depreciation of the naira in the foreign exchange market has really affected investment, decrease standard of living of the populace, increased cost of production which also leads to cost push inflation. Although, many empirical studies have examined the relationship between exchange rate and investment in Nigeria, these studies have yielded ambiguous results. This study therefore re-examined the effect of exchange rate on private sector investment in Nigeria for the periods of 1981 to 2015. The study employed the ordinary least square method. The results of the study showed a significant but negative relationship between exchange rate and private sector investment in Nigeria. The result also revealed that Real Gross Domestic Product (RGDP) and government expenditure are positively related to private sector investment in Nigeria. The study concluded that exchange rate, economic growth and infrastructural development are major determinants of Private investment in Nigeria. The study therefore recommended that change in exchange rate management strategy should be allowed to run a reasonable course of time and that the Central Bank of Nigeria should monitor the unethical practice of some commercial banks which resulted in much fluctuation in the rate of exchange. Finally, the country should provide basic amenities which will further boost private sector investment in Nigeria.

Keywords: Exchange Rate, Private sector Investment, Infrastructural Development, Economic Growth.

Key words : Logistics Management, Performance, Manufacturing Firms,

INTRODUCTION

The strong influence of exchange rates on investment and other macroeconomic variables makes it one of the most important phenomena in an open economy such as Nigeria. Exchange rate according to Ngerebo-a and Ibe (2013), is the ratio between a unit of one currency and the amount of another currency for which that unit can be exchanged at a particular time. Exchange rate of currency is the link between domestic and foreign prices of goods and services. Also, exchange rate can either appreciate or depreciate. Appreciation in the exchange rate occurs if less unit of domestic currency exchanges for a unit of foreign currency while depreciation in exchange rate occurs if more unit of domestic currency exchanges for a unit of foreign currency.

Economic history has shown that there are two common concepts of exchange rate namely; nominal exchange rate and real exchange rate. The nominal exchange rate is the number of unit of domestic currency that must be given up to get a unit of foreign currency. In other word, nominal exchange rate is the price of domestic currency in term of foreign currency. The real exchange rate is the relative price of foreign goods in term of domestic goods. In other word, it is the exchange rate adjusted for price.

Investment on the other hand, means the purchase of capital goods that end up improving the welfare of a population, that is, goods that are used in the production of other goods. Investment can either be public or private. Private sector investment can be classified into domestic private investment and foreign private investment. Domestic private investment has proven to be insufficient in giving the economy the required boost to enable it meet its growth target because of the mismatch between its capital requirements and saving capacity. Foreign private investment, thus, augments domestic resources to enable a country carry out effectively her development programmes and raise the standard of living of her people.

According to Ariyo (1998), Foreign Private Investment can be classified as Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). FDI is an investment in real assets. Real assets consist of physical things such as factories, land, capital goods, infrastructure and inventories. The Multinational Corporations (MNCs) are chief sources of FDI. This may come in both joint ventures as well as fully owned subsidiaries. Whereas, international investment in financial assets such as shares, debentures and bonds are called Foreign Portfolio Investment (FPI).

Though foreign private investment is made up of Foreign Direct Investment (FDI) and Foreign Portfolio Investment, Foreign Direct Investment is often preferred as a means of boosting the economy. This is because FDI disseminates advanced technological and managerial practices through the host country and thereby exhibits greater positive externalities compared with Foreign Portfolio investment which may not involve positive transfers, just being a change in ownership. In addition, available data suggest that FDI flows tend to be more stable compared to Foreign Portfolio Investment (Lipsey, 1999). This is because of the liquidity of Foreign Portfolio Investment and the short time horizon associated with such investments. Also, FDI inflows can be less affected by change in national exchange rates as compared to Foreign Portfolio Investment. However, a balanced combination of the two, taking into consideration the unique characteristics of the recipient economy will bring about the required effects on the economy.

Exchange rate is one of the economic indicators which directly affect investment in Nigeria; as such its role in the overall economic objectives cannot be underestimated. This gives confidence to why the public sectors, foreign investors and private individuals pay a lot

of attention to the exchange rate variation. The exchange rate is among the most watched, analyzed and government manipulated macroeconomic indicators. Since September 1986, when the market determined exchange rate system was introduced in Nigeria via the second tier foreign exchange market, the naira exchange rate has exhibited the features of continuous depreciation and instability. This instability and continued depreciation of the naira in the foreign exchange market has really affected investment, standard of living of the populace, increased cost of production which also leads to cost push inflation. It has also tended to undermine the international competitiveness of non-oil exports and made planning and projections difficult at both micro and macro levels of the economy.

Despite the various efforts by the government to maintain a stable exchange rate, the naira has depreciated throughout the 80's to date (Aliyu, 2011, Benson & Victor, 2012). The naira is now being undervalued in terms of its comparison with foreign prices. The quantity of goods that a naira can buy in other countries is lesser than what it can buy in Nigeria. A good number of small and medium scale enterprises have been strangled out as a result of low dollar/ naira exchange rate and many other problems resulting from fluctuations in exchange rates can also be identified (Adelowokan, Adesoye & Balogun, 2015). This frequent appreciation of the dollar against the naira has led to sharp drop in private sector investment in the country (Jonathan, Emily & Kenneth, 2016).

The empirical literature on the relationship between exchange rate and private sector investment has witnessed major contributions by different scholars over the years. But the empirical evidence provided by most of these studies has been mixed, and a consensus has not yet emerged. The literature is still unclear about the direction of effects of exchange rate variability on the pattern and flow of investment. In fact, the nature of the effects of exchange rate fluctuation on investment is yet to be resolved.

For instance, many researchers found evidence for contractionary effect of exchange rate depreciation (Jayaraman (1996), Gómez (2000), Serven (2000), Damu (2005), Kanagaraj and Ekta (2011), Bakare (2011), Nazar and Bashiri (2012), Adelowokan, Adesoye and Balogun, (2015)). While a pocket of studies found evidence for expansionary effects of exchange rate depreciation (Osinubi and Amaghionyeodiwe (2009), (Edwards (1992), Lyons (1992), Adewuyi (2005) and Bahmani-Oskooee and Kandil (2007), Opaluwa and Ameh (2010), Ehinomen, and Oladipo (2012)). Whereas, Gómez (2000) found evidence that exchange rate has no effect on private sector investment. There is therefore the need for more empirical research on the subject matter. This is particularly important in view of the nature of exchange rate in developing countries like Nigeria.

Also, many of the studies reviewed have carried out research on the effect of exchange rate on foreign private investment and the effect of exchange rate on domestic private investment. Only few studies looked into the effect of exchange rate on both foreign and domestic private investment within the same framework. In the light of the above stated issues, this paper re-examined the relationship between exchange rate and private sector investment in Nigeria by combining both foreign and domestic private investment, with the major aim of examining the effect of exchange rate on private sector investment in Nigeria.

LITERATURE REVIEW

Theoretical Review

The monetary and traditional flow theory serves as the theoretical basis for this study. The monetary approach to exchange rate determination postulates that the relative supply of and demand for money between two countries is the basis for the determination of exchange rate. It views increase in the supply of money as being able to generate inflation, hence, resulting in exchange rate depreciation. The theory opines that a situation of falling prices with a given nominal money supply results in exchange rate depreciation, while the traditional flow theory is essentially based on the principle of the interplay of demand and supply. The forces of the market (interaction between demand and supply) determine the rate of exchange.

However, when there is speculation or expectation of a change in the rate of exchange, this could lead to the disequilibrium even without any change in the initial determined factors. Exchange rate can adversely affect the ability to import and therefore manufacturing output. Fluctuations in exchange rate will cause instability in purchasing power, overall income level and hence, negative impact on investment.

Empirical Review

Since the adoption of floating exchange rates in most developing countries, the question of whether exchange rate fluctuation have independent adverse effects on investment, trade and on different sectors of the economy has attracted a lot of attention in the literature (Adubi and Okumadewa 1999). A review of the literature shows that the effect of exchange rate fluctuation on investment is far from been settled. For instance, Osinubi and Amaghionyeodiwe (2009) and Arratibel *et al*, (2011) have attempted to analysis the nexus between exchange rate and some other macroeconomic variables, but the consensus is also far from been unanimous especially on exchange rate and investment.

In a cross-country study, Jayaraman (1996) examined the relationship between macroeconomic environment and private investment in six Pacific Island countries. The study observed a statistically significant negative relationship between the variability in the real exchange rate and private investment. In the same vein, Thomas (1997) in a study of 86 developing countries, examined data on terms of trade, real exchange rates, and property rights. The study concluded that while factors including credit availability and the quality of physical and human infrastructure are important influences, uncertainty in the foreign exchange rate was negatively related to private investment in sub-Saharan countries. While Gómez (2000) in a study titled exchange rate volatility effects on domestic investment in Spain argued that there is no unique expected exchange rate effect on investment, its sign and importance remaining as a mainly empirical question.

Contrary to Gomez (2000), the study of Damu (2005) examined the impact of exchange rate fluctuation on private sector investment and confirmed that exchange rate has an adverse effect on private domestic investment. This finding is in agreement with the conclusion reached in Serven (2002). Similarly, Bakare (2011) carried out an empirical analysis of the consequences of the foreign exchange rate reforms on the performances of private domestic investment in Nigeria, adopting the ordinary least square multiple regression analytical method. The results of the study showed a significant but negative relationship between floating foreign exchange rate and private domestic investment in Nigeria. The findings and conclusion of the study stressed the need for the government to dump the floating exchange rate regime and adopt purchasing power parity which has been considered

by researchers to be more appropriate in determining realistic exchange rate for naira and contribute positively to macroeconomic performances in Nigeria.

In contrast to the above study, Osinubi and Amaghionyeodiwe (2009) investigated the effect of exchange rate fluctuation on foreign direct investment (FDI) in Nigeria, using secondary time series data from 1970 to 2004. The study utilized the error correction model as well as ordinary least square (OLS) method of estimation. The results of the study revealed a significant positive relationship between real inward FDI and exchange rate. This implies that, depreciation of the Naira increases real inward FDI. Also, the results indicate that the structural adjustment programme (introduced in Nigeria in 1986) had a negative impact on real inward FDI, which could be due to the deregulation that was accompanied by exchange rate fluctuation.

On the other hand, Kanagaraj and Ekta (2011) examined the level of foreign exchange exposure and its determinants in Indian firms and it was found that only 16 percent of the firms had exchange rate exposure at 10 percent level of significance. About 86 percent of the firms are negatively affected by an appreciation of the rupee which confirms that Indian firms are net exporters. On the determinants of exchange rate exposure, the study revealed that export ratio is positively and hedging activity is negatively related to the exchange rate exposure of pure exporter firms. Similarly, Nazar and Bashiri (2012) investigated the relationship between real exchange rate uncertainty and private investment in Iran for the period of 1988 to 2008 by using quarterly data and applying bivariate generalized autoregressive conditional heteroskedasticity (Bivariate GARCH) model in the Iranian economy. The study revealed that real exchange rate uncertainty significantly influences private investment and has a negative effect on it and that private investment uncertainty affects the level of private investment negatively.

Also, Jonathan, Emily and Kenneth (2016) carried out an empirical analysis of the link between exchange rate fluctuation and private domestic investment in Nigeria using simple averages of descriptive statistics and Error Correlation Model (ECM). The study discovered that the depreciation of the currency and interest rate does not stimulate private domestic investment activities in Nigeria. On the other hand, infrastructures, government size and inflation rate had a positive effect on private domestic investment in Nigeria. The study recommended that monetary authorities should adopt appropriate policy in appreciating the value of naira, reduce borrowing and lending charges to boost the performance of private domestic investment through stable macroeconomic environment. Similarly, Nwankwo (2016) examined the effect of exchange rate on foreign private investment and concluded that foreign investment would flow freely if the investment policies are considered friendly by investors.

METHODS

Theoretical Framework and Model Specification

The theoretical framework adopted for this work is the traditional flow model which was further extended by Campa and Goldberg (1999). According to the model, exchange rate uncertainty affects the output of firms and investment behaviour. The model is being extended by decomposing the output of firms. The firm's production function is given as:

$$Y_t^s = AL^\alpha K^{\alpha-1} \dots \dots \dots (1)$$

$$Y_t^s = Y^T + Y^N \dots\dots\dots(2)$$

Y represents good produced which can be divided into tradable and non-tradable goods, K and L is capital and labour inputs respectively, A is an arbitrary function representing managerial skills.

It is assumed that exchange rate is the source of uncertainty in the model. It affects non tradable goods through the procurement of input from abroad while its effect on tradable goods is through import of raw materials and export. In addition, the representative firm faces product demand curve given as:

$$Y_t^d = A_1 \left(\frac{P_T}{P_N} \right)^{-N} \dots\dots\dots(3)$$

Where Q_t^d denote goods demanded, P_T and P_N denote the prices of traded and non-traded goods respectively. A_1 is a function of internal and external functions (such as firm size, government policy and exchange rate policy). The $-N$ parameter stands for the price elasticity of demand for traded goods. Since this study is interested in examining the effect of exchange rate on private sector investment in Nigeria, the study determined the possible links between exchange rate and private sector investment and lay emphasis on exchange rate parameter as follows:

$$PSI = f(REXC) \dots\dots\dots(4)$$

Where: PSI = Private sector Investment, which is a sum of domestic private investment and foreign private investment, $REXC$ = Real Exchange Rate.

To capture the objective of this study, the study adopts the model of Jonathan, Emily and Kenneth (2016). The model is specified as follows:

$$PDI = \beta_0 + \beta_1 REXC + \beta_2 INFRAS + \beta_3 GOVSIZE + \beta_4 INFR + \beta_5 INTR + \varepsilon_t \dots\dots(5)$$

However, the model is modified slightly as follows:

$$PSI = \beta_0 + \beta_1 REXC + \beta_2 RGDP + \beta_3 GCEXP + \beta_4 INTR + \varepsilon_t \dots\dots\dots(6)$$

Where: $RGDP$ = real domestic product, as proxy for economic growth, $GCEXP$ = government capital expenditure as a proxy for Infrastructural development, $INTR$ = interest rate, β_0 = the intercept, $\beta_1 - \beta_4$ are parameters to be estimated and ε = stochastic term. Other variables remained as defined earlier.

Sources of Data and Method of Analysis

The data for this study were sourced from Central Bank Statistical Bulletin (2015). Annual time series data from 1981 to 2015 were employed in this study. The study employed ordinary least square to examine the effect of exchange rate on private sector investment in Nigeria. To avoid spurious regression in this study, stationarity test was carried out on the data. Also, cointegration test was carried out to know if the variables have long-run relationship.

RESULTS AND DISCUSSION

Table 1: Unit Root Test Results

Variables	Level		1st Difference		Conclusion
	ADF Statistics	% 5 Critical value	ADF Statistics	% 5 Critical value	
PSI	-4.354409	-1.953858			I(0)
REXC	-0.784665	-1.951000	-4.255567	-1.951332	I(1)
RGDP	-0.989632	-3.548490	-6.102141	-3.552973	I(1)
GCEXP	-2.754372	-3.548490	-7.391430	-1.951332	I(1)
INTR	-3.365416	-2.951125			I(0)

Table 1 above shows the Augmented Dickey Fuller unit root tests conducted in order to know the stationarity of the variables. The table reveals that PSI and INTR are stationary at level, while REXC, RGDP and GCEXP become stationary at first difference.

Table 2: Cointegration Results

Hypothesized		Trace		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	
None *	0.680760	84.55291	69.81889	0.0021	
At most 1 *	0.463520	48.01496	47.85613	0.0483	
At most 2	0.322555	28.08776	29.79707	0.0777	
At most 3 *	0.299320	15.62611	15.49471	0.0478	
At most 4 *	0.124195	4.243576	3.841466	0.0394	

The results on table 2 above indicate that there are 2 cointegrating variables in the model at 5% level of significance. This implies that there is a long-run relationship among private investment, real exchange rate, real GDP, government capital expenditure and interest rate.

Table 3: Ordinary Least Squares Results

Dependent Variable: PSI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REXC	-0.096052	0.310049	-0.309797	0.0589
RGDP	0.045835	0.440303	0.104098	0.0065
INTR	-0.206975	0.243641	-0.849507	0.4026
GCEXP	0.195844	0.339612	0.057667	0.0000
C	2.206890	5.387288	0.409648	0.6851
R-squared	0.717995			
Adjusted R-squared	0.679097			
Durbin-Watson stat	1.507474			

Table 3 above shows the results of the ordinary least squares estimate. The results as presented above revealed that the coefficient of exchange rate has a negative sign and statistically significant. It means that exchange rate has a negative impact on private investment in Nigeria. Specifically, a unit increase in exchange rate decreases private investment by about 9%. The effects of the findings of this study are obvious. There is an inverse relationship between exchange rate fluctuations and private investment in Nigeria. This implies that fluctuations in the rate of exchange are not favorable to private investment in Nigeria. The implementation of floating exchange rate has affected the private sector investment in Nigeria negatively. Private sector investment has been affected by high cost of foreign exchange for procuring raw materials and machineries required for production, hence the reduction in private sector investment in the economy. This has resulted into increase in the rate of unemployment in Nigeria.

The estimated results also revealed that the coefficient of RGDP is positive and statistically significant. This result somehow, confirms the empirical results found in the investment literature. Real GDP was included in model in order to capture the accelerator effects, with faster growth expected to lead to higher investment rates. This suggests that output recovery will boost the share of private investment. Therefore, a one-percent increase in RGDP leads to about 41% increase in the private sector investment in Nigeria. Thus, given that investment is itself a key factor contributing to real GDP growth, Nigeria can indeed benefit from the virtuous cycle that links increased private investment and real GDP growth.

The coefficient of real interest rate has a negative sign although not significant. Thus the result somehow, does not supports the McKinnon-Shaw hypothesis, which posits that higher interest rates on deposits attract more real balances, which allows them to finance more investment. The results also revealed that the coefficient of government capital expenditure which is a measure of infrastructural development is positively related to private investment in Nigeria. This implies that infrastructural development boosts private sector investment in Nigeria. This is however not to say that private investment is not faced with infrastructure problems in Nigeria. Among core infrastructure, power is the major impediments to the expansion of private investment in the country. The problem of electricity has even made some private investors to relocate to other countries. The case of Dunlop is a classic example.

CONCLUSION

The paper examined the effects of exchange rate on private sector investment in Nigeria, over the period of 1981-2015. This is against the backdrop of the fact that exchange rate is a crucial variable in the drive towards more private sector investment in Nigeria. The statistical results of the study suggested the existence of stable long run relationships between explanatory variables and private sector investment. The results showed that real exchange rate has negative impact on private sector investment in Nigeria, while real GDP which is a measure of economic growth has positive impact on private sector investment in Nigeria. It is apparent that economic growth has been responsible for the numerous change in the private sector investment observed in the past years. Also, government capital expenditure has positive effect on private sector investment in Nigeria. The impact of real interest rate on private sector investment is however not significant. The paper concluded that exchange rate, economic growth and infrastructural development are major determinants of private sector investment in Nigeria. The study therefore recommended that change in exchange rate management strategy should be allowed to run a reasonable course of time. Jettisoning strategies at will and on frequent basis has implication for exchange rate and obvious consequence for private sector investment. The Central Bank of Nigeria should also monitor the unethical practices of some commercial banks which have resulted in much fluctuation in the rate of exchange. The country should also continue on the provision of basic amenities like electricity, transportation, water supply, telecommunication and road which will further boost private sector investment in Nigeria.

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