The Effect of Fluctuations of Exchange Rates on Nigeria's Balance of Payment

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Abstract
The effect of fluctuations of exchange rates on Nigeria's balance of payment is the focus of this research. The objective of study is consistent with the problem under study. The review of literature looked at conceptual, theoretical and empirical basis of previous work done in related areas mostly capturing the responses by Nigeria's monetary authorities towards guiding exchange rates to affect balance of payment over the years. The methodology employed in this study was the ordinary regression model in line with the works of Ofurum and Torbira (2011). The design of the research is the ex-post facto, the motive being to determine the cause-effect relationship between the independent and dependent variables with a view to establishing a casual link between them. The secondary data used in the analysis include data on import rate, export rate and the GDP. The methodology's justification is premised on known volatility test models proving that exchange rate volatility impacts on macro-economic variables such as those performed by Ofurum and Torbira. The two-stage least square was used to test the hypothesis. According to the Gauss-Markov theorem the least squares estimators are assumed unbiased in linear estimation and possessing minimum variance. The relationship between a dependent variable and two or more regressors (independent variables) is examined by the model. It is considered appropriate for research such as this where the impact of exchange rate on macro-economic variables is studied. And in testing the causal relationship between the exchange rate and major macro-economic variable granger causality was used. The findings indicated that exchange rate fluctuations has positive and non-significant impact on Nigeria'a balance of payment(coefficient of EXR = 0.082, t-value = 0.304). This indicates that a one percent increase in balance of payment position in Nigeria is due to 0.08 percent increases in exchange rate fluctuations. The probability value of 0.764 > 0.05 confirms the non-significance of the result. The coefficient of determination which measures the goodness fit of the model as revealed by R-square (R^2) indicates that 72.3% of the variations observed in the dependent variable were explained by variations in the dependent variable. This is quite high could be attributed to the inclusion of control variables such export rate (EXPR) and import rate (IMPR). The test of goodness of fit as indicated by R^2 was properly adjusted by the Adjusted R-Square to 61.2%.The study concludes that the dominance of the oil sector in Nigeria, has left the balance of payment vulnerable when there are sharp changes in the rate of foreign exchange and since much has not been done over the years enlist other sectors of the economy the problem persists. This study recommends that monetary policy authorities

should ensure a consistent exchange rate policy which domesticates the peculiarities of the Nigerian economy to ensure a favourable balance of payment position for Nigeria.

1.0 Introduction

In macroeconomic management, exchange rate policy is an important tool. This is derived from the fact that changes in the rate of exchange have significant implications for a country's balance of payments position and even its income distribution and growth. It aids international exchange of goods and services as well as achieving and maintaining international competitiveness and hence ensures viable balance of payment position.lt serves as an anchor for domestic prices and contributes to internal balance in price stability (CBN, 2011). It is not surprising therefore, that monetary authorities attach much importance to proper management of a country's foreign exchange since its behaviour is said to determine the behaviour of several other macroeconomic variables (Oyejide, 1989). It is even more so for Nigeria which had embarked on a course of rapid economic growth with its attendant high import dependency. An exchange rate, as a price of one country's money in terms of another's, is among the most important prices in an open economy. It influences the flow of goods, services, and capital in a country, and exerts strong pressure on the balance of payments, inflation and other macroeconomic variables. In this way, the choice and management of an exchange rate regime is a critical aspect of economic management to safeguard competitiveness, macroeconomic stability, and growth (Cooper, 1999).

Also, using data from 159 countries for the 1974-99 periods, Levy-Yeyati and Sturzenegger (2000) reclassified the exchange rates into three groups (float, intermediate, fixed) and estimated the correlation between the actual (de facto) exchange rate regimes and macroeconomic performance. The main findings include: (a) fixed exchange rate regimes seem to have no significant impact on the inflation level when compared with pure floats, while intermediate regimes are the clear under-performers; (b) pegs are significantly and negatively correlated with per capita output growth in non-industrial countries; (c) output volatility declines monotonically with the degree of regime flexibility; and (d) real interest rates appear to be lower under fixed rates than under floating rates because of lower uncertainty associated with fixed rates.

Locally, in Nigeria, several works also exist. Ofurum and Torbira, (2011) examined the effect of the demand and supply of foreign exchange on the gross domestic product of the Nigerian economy over a fourteen (14) year-period (1995-2008), it was revealed that supply of foreign exchange has a positive and significant relationship with output level of Gross Domestic Product while the demand for foreign exchange has a negative relationship with gross demand product. This study implies that the growth in supply of foreign exchange has resulted in an increase in the Gross Domestic Product in Nigeria hence the determinants of the demand for foreign exchange should be annualized in order to understand what occasioned the negative relationship with Gross Domestic Product.

Looking at the impact of exchange on the manufacturing sector of Nigeria, Opaluwa, Umeh and Ameh (2010) argue that fluctuations in exchange rate adversely affect output of the manufacturing sector. This according to them is because Nigerian manufacturing is highly dependent on import of inputs and capital goods. These are paid for in foreign exchange whose rate of exchange is unstable. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs. The study actually shows adverse effect and is all statistically significant in the final analysis. They therefore advocated that there is the need to strengthen the link between agriculture and

the manufacturing sector through local sourcing of raw materials thereby reducing the reliance of the sector on import of inputs to a reasonable level.

Examining the impact of different exchange rate regimes on macroeconomic performance particularly on private domestic investment, Bakare (2011) posits that empirical cross-country studies have yielded ambiguous results. Hence, his study extended this body of knowledge by carrying out an empirical analysis of the consequences of the foreign exchange rate reforms on the performances of private domestic investment in Nigeria. The study findings and conclusion support the need for the government to dump the floating exchange 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.

1.1 Statement of problem

The maintenance of the balance of imports and exports of goods for reasons of comparative advantage of international trade is fundamentally essential in foreign exchange management as opined by Obadan 2006. If an economy is to develop beyond subsistence level in the face of global competition, the government support for the real sector must be purposeful. Sadly, the focus on oil as the major foreign exchange earner in Nigeria for over four decades has caused our GDP to drop along with our revenue receipts whenever the international price of oil fell. This has caused the economy to be vulnerable to price shocks. Because of this the manufacturing sector lacks the necessary attention to drive the GDP of the economy by increasing jobs and productivity.

1.2 Research Objective

The research objective is to investigate the impact of exchange rate fluctuations on the balance of payments in Nigeria which is consistent with the statement of problem above. Obaseki (2007) stated that overdependence on oil receipts and its effects on the economy. The research question addressed at the end of this research is to find out how the exchange rate fluctuation affects the balance of payment and the significance of the impact whether positively or negatively

1.3 Research Hypothesis

Exchange rate fluctuations do not have positive and significant impact on balance of trade position in Nigeria

1.4 Scope and significance of study

The scope of study spans through the period 1987 to 2011. The fixed exchange regime was the basis for international trade but in 1986 Nigeria adopted the freely floating exchange rate regime. Different exchange rate management regimes were introduced by the various governments in power at the time, including a dual exchange rate regime in 1988, the Inter-Bank Foreign Exchange Market (IFEM) in 1989 and the reintroduction of a dual exchange rate system in 1995. Over this period, the demand for foreign exchange outstripped supply progressively. The demand for this foreign exchange is expected to have an effect on all macro-economic fundamental in Nigeria; hence this study will examine the impact of foreign exchange rate on major macroeconomic determinants after the introduction of SAP in 1987 to 2011 irrespective of the different exchange rate regimes in Nigeria in that period.

The study is significant to monetary authorities who require information that may be helpful in making policy decision, the academia and interested members of the public who want to research further with the aim of increasing knowledge in the area.

2.0 Review of Literature

Thus, Dornbusch and Giovannini (1990) was of the opinion that the worldwide financial development offers more opportunities to countries but it also comes with constraints on all economic decisions such as exchange rate, monetary or fiscal policies. Financial conditions affect the impact of nominal exchange rate fluctuations on growth stability mainly through balance sheets effects and impacts on foreign currency-denominated debt in developing and emerging countries. The net impact of exchange rate fluctuations will depend on the relative importance of competitiveness changes and costs from balance sheets effects. Financial markets development affects economic performances through efficiency in the allocation of productive resources and adjustment to shocks and may result in a more stable or unstable growth (Dornbusch and Giovannini, 1990).

The critical distinction often is the degree to which movements in the exchange rate pass through to affect domestic macroeconomic variables, most especially, consumer prices, output (as measured by the gross domestic product GDP) and private consumption. Hence the choice of an exchange rate regime is linked, to some extent, to the achievement of specific targets set by the monetary authorities. Therefore as argued by Devereux (2001) that the best monetary policy rule in an open economy is one which stabilizes non-traded goods price inflation and that policy of strict inflation targeting is much more desirable in an economy with limited pass-through. If the monetary authorities are concerned with consumer prices inflation then the flexible exchange rate regime brings some costs as well as benefits. Moreover, the same logic implies that a policy of strict inflation targeting is quite undesirable in an open economy, since it effectively amounts to a requirement of fixing the exchange rate. It stabilizes inflation at the expense of a lot of output instability.

In an attempt to achieve this, a transitory dual exchange rate system (First and Second –Tier – SFEM) was adopted in September, 1986, but metamorphosed into the Foreign Exchange Market (FEM) in 1987. Bureau de change was introduced in 1989 with a view to enlarging the scope of FEM. In 1994, there was a policy reversal, occasioned by the non-relenting pressure on the foreign exchange market. Further reforms such as the formal pegging of the Naira exchange rate, the centralization of foreign exchange in the CBN, the restriction of Bureau de change to buy foreign exchange as an agent of CBN etc. were all introduced in the foreign Exchange Market in 1994 as a result of the volatility in exchange rate. Still, there was another policy reversal in 1995 to that of "guided deregulation". This necessitated the institution of the Autonomous Foreign Exchange Market (AFEM) which later metamorphosed into a daily; two ways quote Inter-Bank Foreign Exchange Market (IFEM) in 1999. The Dutch Auction System was reintroduced in 2002 as a result of the intensification of the demand pressure in the foreign exchange market and the persistence in the depletion of the country's external reverses.

2.1 Exchange Rate Management in Nigeria

The concern with exchange rate management policy in Nigeria can be traced back to 1960 when the country became politically independent, even though the Central Bank of Nigeria and the Federal Ministry of Finance had come into being two years earlier (Ogiogio, 1996). Management of exchange rate can be traced to two divisions/phases; pre-Structural

Adjustment era of 1960-1985 and post-Structural Adjustment era 1986 – till date. The above binary classifications occasioned a closely historical sequence of about five phases, namely:

Phase I: Fixed parity between the Nigerian pound and the British pound (1960-1967)
There was a fixed parity of a one-to-one relationship between the Nigerian pound (N£) and the British pound sterling (B£) until the British pound was devalued in 1967.

Phase II: Fixed parity between the Nigerian pound and the American dollar (1967-1974)
This time, there was a fixed parity with the USD. As a result of the international financial crisis of the early 1970s, which constrained the US President Nixon to devalue the dollar, Nigeria then abandoned the US dollar and re-kept its currency at par with the British pound. During this stage of Nigeria's exchange rate policy it became apparent that there were drawbacks in pegging the naira to a single currency which led to its abandonment.

Phase III: Independent exchange rate policy (1974-1976);
Neglecting the peg policy of naira to a single currency of US dollar in 1974-1976, CBN opted to an independent exchange rate management policy that pegged the naira to either the US dollar or British pound sterling, whichever currency was stronger in the foreign exchange market (see Ogiogio, 1996).

Phase IV: Pegging the naira to an import-weighted basket of currencies (1976-1985)
Here, import-weighted basket experiment was carried out between 1976 and 1985. Due to oil boom of mid '70s, naira was deliberately depreciated, and, so as to ensure stability and viability of the naira, it was pegged to a basket of currencies which comprises the seven currencies of Nigeria's major trading partners; the American dollar (USD), the British pound sterling (GBP), the German mark, the French franc (CFA), the Dutch guilder, the Swiss franc (CHF), and the Japanese yen (JPY). The 1981-1985 global economic crises led to unavailability of exchange rate while naira was grossly over-valued against the US dollar and gave FGN two options; one is to continue with the overvalued naira as a result of fixed exchange rate while the second alternative is to adopt the IMF-World Bank imported SAP which enshrined market forces (free hands of DD and SS). The Federal Government of Nigeria chose the second option and introduced the Second-tier Foreign Exchange Market (SFEM) which later transformed to foreign exchange market (FEM) in September 1986 during IBB regime.

Phase V: Market determined exchange rate policy (1986 – Date)
The Nigerian fifth exchange rate management commenced during post-SAP era up to date. The first market, SFEM was established with immediate effect in September 26, 1986. The Nigerian forex market was liberalized with the introduction of an Autonomous Foreign Exchange Market (AFEM) and the Inter-bank Foreign Exchange Market (IFEM) in 1995 and 1999 respectively. The AFEM metamorphosed into a daily, two-way quote IFEM, October 25, 1999. From 16 July 2002, CBN has replaced IFEM with the Dutch Auction System (DAS) which has been in operation till date.

Flexible Exchange Rate Policy
The main rationale behind the choice of flexible exchange rates is the autonomy in monetary policy they allow when capital mobility is high according to Dornbusch, *et al*. (1990), therefore, flexibility in exchange rates, as stated allows a country to choose its long term inflation rate and, it frees monetary policy that can be aimed at domestic stabilization. Furthermore, exchange rate flexibility would ease the reaction of policy to external shocks by

initiating an automatic adjustment of the domestic economy to changes in the balance of payments. Accordingly Dornbusch and Giovannini (1990) argued that an economy adjusts to changes in money aggregates under flexible exchange rate regimes. Apart from monetary policy, a flexible exchange regime would soften the constraints on available policy instruments. Constraints imposed by exchange rate fixity on monetary and fiscal policies can impede the authorities' ability to influence domestic economic conditions shifting the bulk of the adjustment process on the real economy. Therefore, one would expect, ceteris paribus, a higher volatility of growth under a system of fixed exchange rates relative to a flexible exchange rate arrangement.

Obaseki and Bello (1996) is the view of that a flexible exchange rate mechanism was adopted to correct a perceived overvaluation of the Naira, stimulate the external sector, ensure competitiveness of the economy and above all secure a realistic exchange rate. In other words, the movement from a fixed regime to a flexible regime was to stimulate growth and maintain a healthy external balance, which is what is generally referred to as macroeconomic stability.

Breger, *et al*. (2000) held that following the financial crises in recent decade, many countries switched from one exchange rate regime to another (mostly rigid one to more flexible one) and this has fueled the old debate on the choices and determinants of exchange rate regimes as economists began arguing on what appropriate exchange regime for an economy is a country adopts, over the past 40 years, economists have developed various suggestions on the appropriateness of exchange regime.

Fixed Exchange Rate Policy
Obstfeld (1994), argued that the opposite, under fixed exchange rate regimes, monetary policy will be diverted, partially or totally, to pursue external balance. And, in the presence of high capital mobility and perfect substitutability between domestic and foreign assets monetary policy becomes entirely devoted to the defense of the exchange rate parity. Indeed, when the nominal exchange rate is credibly fixed, interest rate parity predicts the equality of domestic and foreign interest rates, adjusted for risk premium and transaction costs. Any additional money creation will push domestic interest rates downwards and trigger an equivalent amount of capital outflow. Therefore, in a small country, monetary policy becomes inefficient in stabilizing the economy when the exchange rate is pegged and capital is highly mobile.

Eichengreen (1998) was of the view that fixing the exchange rate implies three important dimensions, firstly, that the domestic country imports monetary disturbances occurring in the base country unless devaluation is carried out. Secondly fixing exchange rate also constrains monetary policy that is subordinated to the exchange rate policy leaving a leeway that depends on the amount of foreign exchange reserves available to monetary authorities. The room for fiscal policy can substantially diminish. Thirdly, the trade-off between the lender of last resort function and the defiance of the exchange rate parity sometimes makes monetary authorities interventions inefficient in the presence of bank runs Altogether, these points may make the defense of pegged rates undesirable to some countries at some periods of time. And pegged exchange rates would likely raise growth volatility in an insufficiently flexible economy because the loss of automatic adjustment and the decrease in monetary policy autonomy when capital markets are highly integrated are not sufficiently compensated for (Goldstein, 2002).

The Concept of Exchange Rate Volatility

Mundell (1968) has brilliantly set out the implications of financial flows and financial markets integration. He demonstrated that, with increasing capital mobility, monetary policy is constrained and sometimes inefficient under fixed exchange rates. The stock of money, which is endogenous, adjusts to the economy. This implies an increased sensitivity of the economy and growth to disturbances.

Eichengreen and Hausmann (1999) and Kamil (2006) posit that external exposure may also be explained by if developing countries are unable to borrow from foreign financial markets in their own currency, no matter the term of the debt. All long run borrowings (domestic or foreign) must be made in foreign currency. Therefore, external exposure and exchange rate regimes are unconnected. If the principal causes of external exposure are other than the external borrowing in a foreign currency then, a more flexible exchange rate will introduce some exchange rate risk leading economic agents to hedge their foreign currency-positions. This lowers the vulnerability of domestic firms and banks to exchange rate changes and world financial markets disturbances thereby leading to a lower instability in growth rates. Asides from risks related to external exposure, fixed exchange rate regimes often come under speculative attacks.

Levy Yeyati and Sturzenegger (2002) reached the conclusion that exchange rate flexibility reduces growth volatility in developing countries whereas fixed and intermediate regimes perform better than floats in industrialized countries. Bergwal (2002) simulated the Swedish GDP stability over 1974-1994 with different hypotheses about the exchange rate regime. He concluded that the GDP would have been more slightly stable under flexible exchange rates than under the actual adjustable peg which in turn would have clearly dominated an irrevocably pegged exchange rate.

Determinants of Exchange Rate Regimes

Meon and Rizzo (2002) assumed that the empirical findings on the determinants of exchange rate regimes are numerous and controversial. The reason for the differences among the findings mostly depends on the country samples taken into consideration, time periods, regime classifications used in the analyses, estimation methods and assumptions of econometric models. The econometric methods and regime classifications used in the papers are different from each other. Thus, it creates different results.

Gosh *et al*., (1995) insist that if a flexible exchange rate arrangement is able to reduce growth volatility, why do several countries have recourse to various forms of fixed exchange rate systems which, as aforementioned, can limit monetary autonomy in a considerable way? Credibility in exchange rates, monetary and financial policies serves sometimes as a justification to the choice of a fixed exchange rate regime. Nominal exchange rate fixity it is the argued goes enables a country to import the monetary policy credibility of the base country. This gain of credibility will guide economic agent's expectations and increase monetary policy efficiency, therefore allowing the smoothing of economic cycles. Through credibility and discipline effects on monetary and fiscal policies, fixed exchange rates help create a domestic economic environment favourable to investment and trade (see, Gosh, *et al*., 1995) leading to a relatively sustained and stable growth. As a result, fixed exchange rate regimes reduce the risks of instabilities coming from profligate fiscal and monetary policies observed in many developing countries such as those in Latin America in the 1980's.

The existing empirical literature on terms of trade shocks tends to corroborate the aforementioned theoretical predictions. In a sample of 96 to 100 countries over 1974-2000, Edwards and Levy Yeyati (2003) find evidence that countries with flexible exchange rate regimes adjust relatively better to terms of trade shocks than those running rigid systems of exchange rates. Broda and Tille (2003) analyze 75 developing countries over an almost similar period. Their results suggest that terms of trade fluctuations contribute to 21.3% in the short term and to 30% in the long run to real GDP growth variability in fixed exchange rates countries. These contributions fall to only 2.4% and 9.6% in countries with flexible exchange rates. Edwards and Levy Yeyati further proved that this amplification of the impact of terms of trade shocks on growth volatility increases with the rigidity of nominal exchange rates in both developed and emerging economies (Edwards and Levy Yeyati, 2003).

Central Bank Intervention and Exchange Rate Fluctuations
In thinking about how intervention may be effective, it is useful to conceptualise the exchange rate as an asset price. From this perspective, the current exchange rate depends on present and expected future fundamentals. A strand of research has also highlighted the susceptibility of exchange rate movements, at least in the short-run, to non-fundamental factors such as herd behaviour, information cascades, and speculation (Frankel and Froot, 1990; Allen and Taylor, 1992).

In this context, intervention might affect the spot exchange rate either through its impact on current fundamentals, expectations about future fundamentals, or expectations not based on fundamentals. The literature has focused discussion of these effects through four broad mechanisms: the monetary channel, the portfolio balance channel, the signalling channel and the microstructure or order flow channel.

In the context of managed floating regimes, the usefulness of intervention depends on whether or not exchange rates can be influenced independently of the monetary policy stance since only in this case will intervention constitute a truly separate policy instrument. As such, much of the focus in the literature has been on whether interventions that are sterilised (i.e not backed by changes in monetary policy) have any significant effect. While the standard textbook distinction between sterilised and unsterilised intervention is based on a quantity criterion (the impact on base money), in practice the relevant condition is whether or not interest rates are affected. Since both the demand for and supply of base money changes significantly day to day due to autonomous factors, maintaining short-term interest rates does not always require that the entire amount of intervention be offset in the domestic money market.

With respect to the portfolio balance channel, one would not expect the effect to be very strong in advanced countries because typical intervention transactions are miniscule relative to the stock of outstanding assets. In addition, the degree of substitutability between domestic and foreign currency bonds tends to be quite high (Dominguez and Frankel, 1993). Galati and Melick (2002) argue that the portfolio channel may be more relevant for emerging markets because they are more likely to have large reserve portfolios relative to local foreign exchange market turnover or the stock of domestic bonds outstanding. Moreover, given that the degree of substitutability between emerging market currency debt and foreign currency debt is generally smaller – as reflected in higher risk premia on the former – the portfolio balance effect may also be stronger in these countries.

In terms of the impact of intervention, the evidence is more clear-cut with respect to the volatility than the level of the exchange rate. Among those that found a significant effect on the level, Domaç and Mendoza (2002) concluded in the context of Mexico and Turkey that central bank foreign exchange sales (but not purchases) were generally effective in influencing the exchange rate in both countries. In particular, a net sale of US$100 million appreciated the exchange rate by 0.08% on average in Mexico and 0.2% in Turkey. In their study of the Chilean experience, Tapia and Tokman (2004) found that although actual intervention appeared to have a small and generally insignificant effect on contemporaneous exchange rate movements, public announcements of potential interventions had significant effects on the level and trend of the exchange rate.

Monetary Policy and Macro-Economic Stabilization
Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of money in an economy, to match with the level of economic activities. It can also be described as the act of controlling the direction and movement of monetary policy and credit facilities in pursuance of stable price and economic growth in an economy CBN (1992).

In modern economies, the central bank is the authority with the mandate of manipulating monetary policy; through monetary policy tools, to achieving desired macroeconomic objectives which includes; the achievement of price stability with respect to both domestic and external prices. In the same vein uses inflation rate to track movement in the domestic price while exchange rate policy are used as tool in ensuring external stability thereby enhancing export performance in the economy according to Neaime (2008). In addition, exchange rate policy impacts on the outcome of stabilization measures and debt management strategies according to Busari and Olayiwola (1999) respectively in developing countries which includes Nigeria.

Emeka (2005) opined that the pursuit of price stability invariably implies the indirect pursuit of other objectives such as economic growth, which can only take place under condition of price stability and allocative efficiency of the financial markets, since inflation is generally considered as purely a monetary phenomenon, with significant cost to the economy. The primary goal of monetary policy to him is to ensure that money supply is at a level that is consistent with the growth rate will be ensured.

Foreign Exchange Rate Management and Transmission Mechanism
Monetary transmission is a complex and interesting topic because there is not one, but many, channels through which monetary policy operates. The exhibit depicts schematically an eclectic view of monetary policy transmission, identifying the major channels that have been distinguished in the literature. The process begins with the transmission of open market operations to market interest rates, either through the reserves market or through the supply and demand for money more broadly. From there, transmission may proceed through any of several channels.

The interest rate channel is the primary mechanism at work in conventional macroeconomic models. The basic idea is straightforward: given some degree of price stickiness, an increase in nominal interest rates, for example, translates into an increase in the real rate of interest and the user cost of capital. These changes in turn lead to a postponement in consumption or a reduction in investment spending. This is precisely the mechanism embodied in conventional specifications of the "IS" curve—whether of the "Old Keynesian" variety, or

the forward looking equations at the heart of the "New Keynesian" macro models developed by Rotemberg and Woodford (1997) and Clarida, Galí, and Gertler (1999), among others. But as Bernanke and Gertler (1995) have pointed out, the macroeconomic response to policy-induced interest rate changes is considerably larger than that implied by conventional estimates of the interest elasticities of consumption and investment. This observation suggests that mechanisms other than the narrow interest rate channel may also be at work in the transmission of monetary policy.

One such alternative path is the wealth channel, built on the life-cycle model of consumption developed by Ando and Modigliani (1963), in which households' wealth is a key determinant of consumption spending. The connection to monetary policy comes via the link between interest rates and asset prices: a policy-induced interest rate increase reduces the value of long-lived assets (stocks, bonds, and real estate), shrinking households' resources and leading to a fall in consumption.

Exchange Rate Regimes and Fluctuations
The discussion will be based on the flexible exchange rate regimes and the fixed exchange rate regimes. A main rationale behind the choice of flexible exchange rates is the autonomy in monetary policy they allow when capital mobility is high. Flexibility in exchange rates, as stated by Dornbusch et al. (1990), allows a country to choose its long term inflation rate and, it frees monetary policy that can be aimed at domestic stabilization. Furthermore, exchange rate flexibility would ease the reaction of policy to external shocks by initiating an automatic adjustment of the domestic economy to changes in the balance of payments.

At the opposite, under fixed exchange rate regimes, monetary policy will be diverted, partially or totally, to pursue external balance. And, in the presence of high capital mobility and perfect substitutability between domestic and foreign assets (Obstfeld, 1994), monetary policy becomes entirely devoted to the defence of the exchange rate parity. Indeed, when the nominal exchange rate is credibly fixed, interest rate parity5 predicts the equality of domestic and foreign interest rates, adjusted for risk premium and transaction costs. Any additional money creation will push domestic interest rates downwards and trigger an equivalent amount of capital outflow.

Therefore, in a small country, monetary policy becomes inefficient in stabilizing the economy when the exchange rate is pegged and capital is highly mobile. The real effects of monetary policy stem from nominal rigidities and international capital mobility (Dornbusch and Giovannini, 1990). When prices and nominal wages are rigid changes in money supply modify real money balances which in turn induce changes in real expenditure. Interest rates changes result in capital movements that accentuate the evolution of the exchange rate and so, have a tendency to reinforce monetary policy effects on the economy (Mundell, 1963).

According to Dornbusch and Giovannini (ibid), the economy adjusts to changes in money aggregates under flexible exchange rate regimes. Apart from monetary policy, a flexible exchange regime would soften the constraints on available policy instruments. Constraints imposed by exchange rate fixity on monetary and fiscal policies can impede the authorities' ability to influence domestic economic conditions shifting the bulk of the adjustment process on the real economy. Therefore, one would expect, ceteris paribus, a higher volatility of growth under a system of fixed exchange rates relative to a flexible exchange rate arrangement.

However, some caveats are worth mentioning. The monetary framework such as an inflation targeting strategy can reduce the advantages implied by exchange rates flexibility. Exchange rates flexibility and furthermore the discretion in policy-making it brings will harm growth stability if the government is unable to pursue consistent policies. Fear of floating highlighted by Calvo and Reinhart (2002) and a high pass-through of exchange rate movements to domestic prices in small countries tend to reduce or overturned the advantages provided by a flexible exchange rate arrangement. It should also be noticed that the timing and the coordination of economic policies (namely monetary and fiscal policies) are important to guarantee the success of economic policy.

2.2 Empirical Review
Exchange Rate and Economic Growth

According to Dolan *et al*. (1991) economic growth is most frequently expressed in terms of increase in Gross Domestic Product (GDP), a measure of the economy's total output of goods and services. This GDP as a measure of economic growth, like any other economic quantities, must be expressed in real terms. That is, it must be adjusted for the effects of inflation so as for it to provide a meaningful measure of growth overtime.

Economic fluctuations influence decisions by economic agents, thereby modifying the efficient allocation of productive resources in the economy (IMF, 1998). Nevertheless, economists have long believed that growth volatility was neutral vis-a-vis growth, leading them to study both phenomena separately. Then, it was subsequently shown that volatility and growth are not really independent from each other and that the costs induced by volatility can be substantial. As a consequence, the study of business cycles has gained momentum. Indeed, Ramey and Ramey (1994) among others like Hnatkovska and Loayza (2004) have proved that growth volatility tends to reduce mean growth rates.

Hence Caporale and Pittis (1995) was of the opinion that changes in arrangement of exchange rate have an impact on economic growth or to investigate the extent to which volatility of exchange rate may be responsible for changes in the rate of economic production because development strategies by many developing countries have either been changed or are under consideration to change. Increase in nominal and real exchange rate volatility accompany such moves Domestic and foreign investment decision both are negatively affected by exchange rate fluctuations. As the degree of variability associated with flexible exchange rate is relatively high, so this matter becomes more important for the countries which switched from fixed exchange rate regime to flexible exchange rate regime (Coes 1981; Brada and Mendez 1988; Caballero and Corbo 1989; Cote 1994; Baum et al 2001; Arize, Osange, and Slottje 2004).

Harberger (2003) say while exchange rate regimes have much weaker impact on economic performance in industrial economies, hence, Harberger (2003) studied the impact of economic growth on real exchange rate. He found that there is no systematic connection between economic growth and real exchange rate. Husain *et al*. (2004) found in their study that little access to international capital is available for the weaker and less developed countries, so low rate of inflation and higher level of durability is associated with fixed exchange rate regime in those countries. However, they found no robust relationship between economic performance and exchange rate regime in the developing economies. They also found that advanced economies may experience durable and slightly higher level of growth rate without higher level of inflation in flexible exchange rate regime.

Michael *et al*., (2003) also posits that literature seems to suggest that keeping the real exchange rate at competitive levels and avoiding excessive volatility are important for growth though the statistical evidence is not overwhelming. But this fact, in and of itself, conveys an important message. A stable and competitive real exchange rate should be thought of as a facilitating condition for economic growth. Keeping it at competitive levels and avoiding excessive volatility facilitate efforts to capitalize on economic growth enhancing fundamentals: human capital, savings and investment, and the institutional capacity to assimilate and generate organizational and technological knowledge, *inter alia*. The transmission mechanism in which devaluation or real exchange rate volatility can affect economic growth has however been a subject of theoretical debate with inconclusive empirical findings.

Ofurum and Torbira, (2011) empirically examined the effect of the demand and supply of foreign exchange on the Gross Domestic Product of the Nigerian economy over a fourteen (14) year-period (1995-2008). Employing the use of Vector Auto Regression (VAR) models on the time series data, the result reveal that supply of foreign exchange has a positive and significant relationship with output level of Gross Domestic Product while the demand for foreign exchange has a negative relationship with Gross Domestic Product. Their study implies that the growth in supply of foreign exchange has resulted in an increase in the Gross Domestic Product in Nigeria hence the study recommends that the determinants of the demand for foreign exchange should be annualized in order to understand what occasioned the negative relationship with Gross Domestic Product.

When the results of previous studies are considered, no results appear to be reasonably robust to changes in country coverage, sample period, estimation method, and exchange rate regime classification. Therefore, Von Hagen and Zhou (2005) was of the view that there is a negative association with the probability of adopting a flexible regime as explained by Rizzo (2002) who posited that size of economy (Gross Domestic Product) is found to be positively associated with floating regimes in almost all studies, but not always significantly. Economic development (GDP per capita) is found to be significantly associated with floating regimes by four studies (Edwards, 1996,) significantly associated with fixed regimes by three studies (Rizzo, 1998) and not significantly associated with any particular regime by another two studies (Poirson, 2001).

Exchange Rate and Balance of Payment
Much of the literature on monetary policy in open economies has been based on the premise that the internal and external balance of an economy is instantaneously affected by movement in exchange rates (Svensson, 2000; Ball, 1998; 2000). To many policy makers, this represents both an opportunity and a constraint on optimal monetary policies. Although various schools of thought exist on the subject, the opinions expressed are logically consistent.

The effectiveness of different exchange rate system in promoting competitiveness in international trade and their impact on macroeconomic stability have been discussed by Wickham (1985), Frankel (1996) and others researchers after the second world war. Most recently, the debate has based on the appropriate choice of exchange rate regime for transition economies. The exchange rate is one of the most important policy variables, which determines the trade flows, capital flows and foreign direct investment, inflation, international reserve and remittance of an economy (Nusrate, 2008). Many economies, especially African countries faced crisis in 1990s due to miss application and bad choice of exchange rate regime. However, there is no consensus in the theoretical or empirical

literature about any unique effect of the exchange rate volatility on macroeconomic indicators.

Various studies regarding the impact of exchange rate fluctuations on the volume of trade have shown the mixed pattern of results. Akhtar and Hilton (1984), Kumar and Dhawan (1991) have shown that there is negative effect of exchange rate uncertainty on volume of trade. Rogoff (1998) described that volatility of exchange rate becomes problematic for both the exporters and importers.

3.0 Methodology of study

The research design adopted in this research is the *ex-post facto* research design. This is the type of research involving events that have already taken place, data exists as no attempt is made to control or manipulate relevant independent variables apparently because these variables are not manipulatable. Also, as described by Kerlinger (1970), the *ex-post facto* research design also called causal comparative research is used when the researcher intends to determine cause-effect relationship between the independent and dependent variables with a view to establishing a causal link between them. Hence, the justification for the adoption of this research design hinges on the unmaniputability of data and the intention of the researcher to determine cause-effect relationship of the impact of exchange rate on macro-economic variables in Nigeria from 1987-2011.

As a matter of Consistency with researches conducted in this area of finance in Nigeria where most data utilized were obtained from the Central of Nigeria Statistical Bulletin for the relevant periods the nature and sources of data for this type of research will be secondary data. Hence, secondary data will be used in this research and are data already processed and collated.

3.1 Model Specification

The ordinary regression model in line with the works of Bakare (2011), Accam (1997) and Akpan (2009)

Was adopted in the work but it is vital to specify the model for a clearer grasp of the subject. In examining the impact of exchange rate on the balance of payment we utilize the model as shown in Ofurum and Tobira (2011) and Onoh J.O (2016).

3.1.1 Restatement of hypothesis

Exchange rate fluctuations do not have positive and significant impact on balance of trade position in Nigeria

$$\%\Delta BOP = a + b_1 ER + b_2 EX + b_3 IMP + \mu \quad \text{.................................... (i)}$$

Where;

$\%\Delta BOP$	=	Percentage Change in Balance of payment of Nigeria
ER	=	Exchange rate
a	=	Constant of the regression function
b_1-b_3	=	Coefficient of the independent variables
EX	=	Export rate
IMP	=	Import rate
μ	=	Error term

3.2 Model Assumptions

A model according to Yomere and Aghonifoh (1999) is a simplified view of reality designed to enable the researcher describe the essence and inter-relationship within the system or phenomenon it depicts. The underlying assumptions for the modified Ofurum and Tobira (2011) model to be used in this study are:

    i.   It is a linear function of a random variable

    ii. It is unbiased. Thus its average or expected value are equivalent to its true value

    iii. It has minimum variance, i.e, it is an efficient estimator, given an unbiased estimator with the least variance (See Onwumere, 2009).

3.3 Description of Explanatory Variables

Dependent Variables

Gross Domestic Product Growth Rate (GDPGR)

Gross Domestic Product (GDP) is the total value of goods and services produced in a country over a specified period. It equals the total income of everyone in the economy, and the total expenditure on the economy's output of goods and services (Mankiw, 1994). GDP is a gauge of economic of economic performance because it measures something people care about their incomes. Similarly, an economy with a large output of goods and services can better satisfy the demands of households, firms and the government. In line with the works of Ofurum and Torbira, (2011), Farkas-Fekete and Judit (2005), Yougbare (2006), this research will adopt the gross domestic product growth rate as proxy for the productivity of the Nigerian economy.

$$GDPGR = (GDP2-GDP1)/GDP1*100 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(ii)}$$

Balance of Payment (BOP)

Balance of payment is the difference between what a country pays for its import and what it receives for her export. Exchange rate policy is an important tool derives from the fact that changes in the rate of exchange have significant implications for a country's balance of payments position and even its income distribution and growth. A healthy balance of payment position is an indication of strength of the home countries currency. Thus in line with the work of Herve, Shen and Amed (2010) who investigated the effect of real exchange rate on the balance of trade of Cote d'Ivoire using multivariate cointegration tests and vector error correction models with time series data covering the periods of 1975-2007. This work adopts the quotient of balance of payment on gross domestic product of Nigeria as a measure of balance of payment position of Nigeria. Thus, it will be represented as;

$$BOP = BOP/GDP \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(iii)}$$

Independent Variable

Exchange Rate

The exchange rate is the rate at which a country's currency trades with the currency of other countries. Literature seems to suggest that keeping the real exchange rate at competitive levels and avoiding excessive volatility are important for growth though the statistical evidence is not overwhelming. But this fact, in and of itself, conveys an important message. A stable and competitive real exchange rate should be thought of as a facilitating condition for economic growth (Onwumere, 2009). Keeping it at competitive levels and avoiding excessive volatility facilitate efforts to capitalize on economic growth enhancing fundamentals: human capital, savings and investment, and the institutional capacity to

assimilate and generate organizational and technological knowledge. Therefore, adopting works of Aguirrea and Calderon (2006) and Herve, Shen and Amed (2010), the annualized real exchange rate will be adopted as a measure of exchange rate.

Control Variables
Export Rate
An export of a good occurs when there is a change of ownership from a resident to a non-resident; this does not necessarily imply that the good in question physically crosses the frontier. Export of goods is a major source of foreign exchange to any nation. It determine the volume of foreign exchange available to that country hence a major determinant of exchange rate. In this study, total export ratio will be measure by Nigeria's total export divided gross domestic product by (Singh, 2002).

$$EX = \text{Total Export/GDP} \dots\dots\dots\dots\dots\dots\dots (ix)$$

Import Rate
An import of a good occurs when there is a change of ownership from a non-resident to a resident; this does not necessarily imply that the good in question physically crosses the frontier. Importation of goods and services is a major source of depletion of a country's foreign currencies hence has an impact on exchange rate. In this study, the total import ratio will be measured by Nigeria's Total import divided by gross domestic product (Singh, 2002).

$$IMP = \text{Total Import/GDP} \dots\dots\dots\dots\dots\dots\dots (x)$$

3.4 Model Justification
The justification for the use of these models was based on the volatility of exchange rate in impacting on macro-economic variables. For instance, Ofurum and Torbira, (2011) empirically examined the effect of the demand and supply of foreign exchange on the gross domestic product of the Nigerian economy over a fourteen (14) year-period (1995-2008). Employing the use of vector auto regression (VARs) models on the time series data, the result reveal that supply of foreign exchange has a positive and significant relationship with output level of Gross Domestic Product while the demand for foreign exchange has a negative relationship with gross demand product. Herve, Shen and Amed (2010) investigated the effect of real exchange rate on the balance of trade of Cote d'Ivoire using multivariate cointegration tests and vector error correction models with time series data covering the periods of 1975-2007. Their investigation results confirm the existence of long-run relationships among Trade Balance (TB), Real Exchange Rate (RER), and foreign and domestic incomes.

However, Opaluwa, Umeh and Ameh (2010) examined the impact of exchange rate fluctuations on the Nigerian manufacturing sector during a twenty (20) year period (1986 – 2005). The argument was that fluctuations in exchange rate adversely affect output of the manufacturing sector. This according to them is because Nigerian manufacturing is highly dependent on import of inputs and capital goods. These are paid for in foreign exchange whose rate of exchange is unstable. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs. The econometric tool of regression was used for the analysis. In the model that was used, manufacturing output employment rate and foreign private investment were used as the explanatory variables. The result of the regression analysis shows that coefficients of the variables carried both positive and negative signs. The study actually shows adverse effect and is all statistically significant in the final analysis. They therefore recommended that there

is the need to strengthen the link between agriculture and the manufacturing sector through local sourcing of raw materials thereby reducing the reliance of the sector on import of inputs to a reasonable level. Bakare (2011) adopted the ordinary least square regression analytical method and the result indicate significant but negative relationship between floating foreign exchange rate and private domestic investment in Nigeria.

3.5 Techniques of Analysis

The Gauss – Markov theorem which sees the least squares estimators as unbiased linear estimator, having minimum variance is used in testing the hypothesis stated. However, Opaluwa, Umeh and Ameh (2010) examined the impact of exchange rate fluctuations on the Nigerian manufacturing sector during a twenty (20) year period (1986 – 2005). The argument was that fluctuations in exchange rate adversely affect output of the manufacturing sector. This according to them is because Nigerian manufacturing is highly dependent on import of inputs and capital goods. These are paid for in foreign exchange whose rate of exchange is unstable. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs. The econometric tool of regression was used for the analysis. In the model that was used, manufacturing output employment rate and foreign private investment were used as the explanatory variables. The result of the regression analysis shows that coefficients of the variables carried both positive and negative signs. The study actually shows adverse effect and is all statistically significant in the final analysis. They therefore recommended that there is the need to strengthen the link between agriculture and the manufacturing sector through local sourcing of raw materials thereby reducing the reliance of the sector on import of inputs to a reasonable level. Bakare (2011) adopted the ordinary least square regression analytical method and the result indicate significant but negative relationship between floating foreign exchange rate and private domestic investment in Nigeria.

4.0 Data Analysis and discussion of results

Three steps were used to test the hypotheses. In step one; the hypotheses were restated of in null and alternate forms. In step two, the results were analysed while in step three, decisions were made. The decision rule involved the rejection or acceptance of the null or alternate hypotheses based on criterion of the techniques of analyses.

TEST OF HYPOTHESIS
Step One: Restatement of the Hypothesis in Null and Alternate forms:

Ho2:   Exchange rate fluctuations do not have positive and significant impact on balance of trade position in Nigeria

Ha2:   Exchange rate fluctuations have positive and significant impact on balance of trade position in Nigeria

Step Two: Presentation and Analysis of Result

Table 4.1 Regression Results of Hypothesis Two
Dependent Variable: BOP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	0.081868	0.269360	0.303934	0.7642
EXPR	0.142822	0.068910	2.072578	0.0507
IMPR	-0.214578	0.108663	-1.974712	0.0616
C	-0.293318	0.313560	-0.935444	0.3602
R-squared	0.723348	Mean dependent var		-0.077600

Adjusted R-squared	0.612397	S.D. dependent var	0.628625
S.E. of regression	0.592244	Akaike info criterion	1.935851
Sum squared resid	7.365815	Schwarz criterion	2.130871
Log likelihood	-20.19814	F-statistic	2.013040
Durbin-Watson stat	2.261785	Prob(F-statistic)	0.142930

Source: E-view Result

As revealed from table 4.7, exchange rate fluctuations has positive and non-significant impact on Nigeria's balance of payment (coefficient of EXR = 0.082, t-value = 0.304). This indicates that a one percent increase in balance of payment position in Nigeria is due to 0.08 percent increases in exchange rate fluctuations. The probability value of $0.764 > 0.05$ confirms the non-significance of the result. The coefficient of determination which measures the goodness fit of the model as revealed by R-square (R^2) indicates that 72.3% of the variations observed in the dependent variable were explained by variations in the dependent variable. This is quite high could be attributed to the inclusion of control variables such export rate (EXPR) and import rate (IMPR). The test of goodness of fit as indicated by R^2 was properly adjusted by the Adjusted R-Square to 61.2%.

Discussion of results with objective of study
According to Svensosn (2000) and Ball (1998; 2000), much of the literature on monetary policy in open economies has been based on the premise that the internal and external balance of an economy is instantaneously affected by movement in exchange rates. Again, Nusrate (2008) opine that exchange rate is one of the most important policy variables, which determines the trade flows, capital flows and foreign direct investment, inflation, international reserve and remittance of an economy, it was against this background that one of the objectives of this study was to examine the impact of exchange rate on balance of payment position in Nigeria. The result of this study reveals that exchange rate fluctuations has positive and non-significant impact on Nigeria's balance of payment confirms the study of Nusrate (2008). However, Akhtar and Hilton (1984), Kumar and Dhawan (1991) show that there is negative effect of exchange rate uncertainty on volume of trade and Rogoff (1998) described that volatility of exchange rate become problematic for both the exporters and importers because of uncertainty involved in the prices of exchange rate.

The negative impact of exchange rate according to Rangrajan (1986) is due to non smoothening functioning of trade and world economy which is associated or impaired by exchange rate uncertainty, because in order to be compensated for unanticipated changes in exchange rate, traders and bankers demand risk premium which leads to increase in prices of internationally traded goods. The general view often associated again in the negative impact reveal that an increase in risk level shifts risk adverse individuals to those transactions which are less risky. Thus, it can be said that fluctuating exchange rate should negatively affect the level of trade because of increase of risk in international transactions (see, De Grauwe, 1988) because the risk adverse individuals increase exports to avoid the chance of drastic decrease in their revenue because they are more worried about the adverse possible outcome.

5.0 Conclusion and Policy recommendation
The findings of this study suggest that fluctuations in exchange rate have a negative and significant impact on economic growth in Nigeria but have positive and non-significant impact on Nigeria's balance of payment. Foreign exchange volatility affects the performance of macroeconomic indicators positively and negatively. Most import dependent economy like Nigeria faces the problem of foreign exchange rate volatility. Nigeria's over dependence in the Oil and Gas sector of the economy has affected the major macro economic variables and

adverse foreign exchange rate regimes have affected the Nigeria economy over the years. Nigeria major foreign earning is from oil; hence, volatility of crude oil prices in the world market has made the Nigerian economy highly susceptible to the ever changing exchange rates thus affecting the prices of goods and services in the Nigerian economy. Nigeria's failure to diversify its economy which would have helped cushion the effect of the constant changes in oil prices stems in part from weaknesses in the nation's small and insular private sector. This has had a heavy toll on our foreign reserves and invariably, our balance of trade and balance of payment.

Recommendations

The effectiveness of different exchange rate system in promoting competitiveness in international trade often depends on the appropriate choice of exchange rate regime for in countries. The exchange rate is one of the most important policy variables, which determines the trade flows, capital flows and foreign direct investment, inflation, international reserve and remittance of an economy. Many economies, especially African countries faced crisis due to miss application and bad choice of exchange rate regime. Therefore, this study recommends that monetary policy authorities should ensure a consistent exchange rate policy which domesticates the peculiarities of the Nigerian economy to ensure a favourable balance of payment position for Nigeria.

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APPENDIX

Year	Exr	Log Exr	Gdp (N,000)m	Gdpgr	Bop(N,000)m	Bop/gdp	Impr(N,000)m	expr	impr
1987	14.7	1.17	204,806.50	-0.57	-17,964.80	-0.09	17,861.70	0.15	0.09
1988	13	1.11	219,875.60	7.36	-20,795.00	-0.09	21,445.70	0.14	0.10
1989	8.9	0.95	236,729.60	7.67	-22,993.50	-0.10	30,860.20	0.24	0.13
1990	7.7	0.89	267,550.00	13.02	-5,761.90	-0.02	45,717.90	0.41	0.17
1991	6.3	0.80	265,379.10	-0.81	-15,796.60	-0.06	89,488.20	0.46	0.34
1992	3.7	0.57	271,365.50	2.26	-101,404.90	-0.37	143,151.20	0.76	0.53
1993	3	0.48	274,833.30	1.28	-41,736.80	-0.15	165,629.40	0.80	0.60
1994	3	0.48	275,450.60	0.22	-42,623.30	-0.15	162,788.80	0.75	0.59
1995	0.7	-0.15	281,407.40	2.16	-195,216.30	-0.69	755,127.70	3.38	2.68
1996	30.17	1.48	293,745.40	4.38	-53,152.00	-0.18	562,626.60	4.46	1.92
1997	28.83	1.46	302,022.50	2.82	1,076.20	0.00	845,716.60	4.11	2.80
1998	28.32	1.45	310,890.10	2.94	-220,671.30	-0.71	837,418.70	2.42	2.69
1999	73.91	1.87	312,183.50	0.42	-326,634.30	-1.05	862,515.70	3.81	2.76
2000	77.21	1.89	329,178.70	5.44	314,139.20	0.95	985,022.40	5.91	2.99
2001	81.3	1.91	356,994.30	8.45	24,729.90	0.07	1,358,180.30	5.23	3.80
2002	88.95	1.95	433,203.50	21.35	-563,483.90	-1.30	1,512,695.30	4.03	3.49
2003	100.63	2.00	477,533.00	10.23	-162,298.20	-0.34	2,080,235.30	6.47	4.36
2004	107.07	2.03	527,576.00	10.48	1,124,157.20	2.13	1,987,045.30	8.72	3.77
2005	106.58	2.03	561,931.40	6.51	56,136.95	0.10	2,800,856.30	12.90	4.98
2006	105.02	2.02	595,821.60	6.03	59,343.83	0.10	3,108,519.30	12.29	5.22
2007	106.41	2.03	634,251.10	6.45	34,630.11	0.05	3,911,952.60	13.10	6.17
2008	79.01	1.90	674,889.00	6.41	5,466.60	0.01	5,189,802.60	15.06	7.69
2009	95.73	1.98	718,977.33	6.53	-85,171.84	-0.12	5,102,534.40	11.62	7.10
2010	96.57	1.98	775,525.70	7.87	-46,298.88	-0.06	8,005,374.20	14.23	10.32
2011	101.18	2.01	834,161.83	7.56	108441.04	0.13	10,237,775.60	17.06	12.27

Source: CBN Statistical Bulletin