

## Effects of Exchange Rate Fluctuations on the Balance of Payment in the Nigerian Economy

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### Abstract

This study seeks to find out how exchange rates fluctuation impacts on balance of payments (BOP). The secondary data were used specifically from CBN and National Statistics publications from 1990-2013. Average values for import, exports, exchange rate and balance of payment were collected for various years. Data were analyzed using multiple regression unit root test, making use of Augmented Dickey Fuller Test, E-view test statistics making use of variables, critical values and decision in carrying out unit root test. Where the findings showed that foreign exchange rate fluctuation in general affects some of these macro-economic variables. The Researcher concludes that government should harmonize monetary and fiscal policies to boost non-oil exports. A market driven exchange rate will encourage exports and take care of disequilibria in balance of payments.

**Keywords:** Exchange rate, Fluctuations, Balance of Payment, Nigerian Economy.

### Background of the Study

The principle of opportunity cost demands that each country has to produce goods and services in which they enjoy a comparative advantage over others. This then means that those goods and services they cannot produce they will buy from other countries. This leads to international trade. When there is buying and selling across national borders, payments have to be made as is done locally, the different being that payments in international trade involves currencies other than the currency of the nation making the payments.

In order to do this, foreign exchange will be involved. Nzota (1999) defined exchange rate as “the price of one currency in terms of another”. It is the price of one unit of a foreign currency in relation to a domestic currency. Exchange rate policy is a fundamental macroeconomic policy that guides domestic investors on the best way to strike a balance between their trading partners abroad (Marson, 1987).

Exchange rate in other words refers to the price of one currency (the domestic currency) in terms of another (the foreign currency). Movements in exchange in the exchange rate have ripple effects on other economic variables such as interest rate, inflation rate, unemployment, money supply, etc. These facts underscore the importance of exchange rate to the economic well-being of every country that opens its doors to international trade in goods and services.

Exchange rates can be fixed, managed floating and free floating or flexible or fluctuating rates.

### Statement of the Problem

The statement of problem of this study is to determine the major causes of exchange rate fluctuations and also how it affects the balance of payment in the Nigerian economy between 1986 and 2013.

## **Objectives of the Study**

The basic objective is to investigate the relationship between exchange rate fluctuations and balance of payments. This study shall also examine the following objectives;

1. To investigate the relationship between exchange rate fluctuations and the level of exports.
2. The relationship between balance of payment and exchange rate, import and export.
3. To investigate the relationship between the flexible import dependency and exchange rate.

## **Research Questions**

In view of the above study, the researchers wish to ask the following questions:

1. How has exportation and importation of goods and services help in correcting balance of payment deficit in Nigeria?
2. To what extent has exchange rate fluctuations exert influence on balance of payments in Nigeria?
3. Generally, how has exchange rate helped in correcting balance of payment deficit in Nigeria from 1990-2013.

## **Formulation of Hypotheses**

In order to carry out this study, the following hypothesis has been formulated to guide the study.

**HO1:** There is no significant relationship between exchange rate and the level of export earnings.

**HO2:** There is no significant relationship between Balance of Payment and exchange rate, import and export.

**HO3:** The fluctuation in the exchange rate has not increase import dependency.

## **Significance of the Study**

It is the belief of the researcher that this study will show how exchange rate fluctuations affect the Nigerian economy. It will help policy makers to consider the alternative means of controlling exchange rate and its effects on foreign trade and the economy in general. It will show the impact of the fluctuation also on our balance of payments, import and export. It will also add to available knowledge on effect of exchange rate fluctuation regimes on import, export and balance of payments.

## **Scope of the Study**

This study will not be able to look at all the macro and micro economic variables that are related to exchange rate and balance of payments because of time constraints. In order to achieve the objectives of the study, the following variables will be looked at, exchange rate, balance of payments, export earnings and import expenditure. The major limiting factor is the inaccessibility of relevant information from some of the interested authorities for data collections.

## **Review of Related Literature**

### **Conceptual Review**

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This includes the various definitions, descriptions, highlights and opinions about the subject matter. Below are some examples; Oladipupo and Onotaniyohuwo, (2011) Exchange rate refers to the price of one currency (the domestic currency) in terms of another (the foreign currency). Exchange rate is the price of one currency in terms of another. It is the amount of foreign currency that may be bought for one unit of the domestic currency or the cost in domestic currency of purchasing one unit of the foreign currency (Soderstine, 1998). It is the rate at which one currency exchanges for the other, and it is used to characterize the international monetary system (Iyoha, 1996). Anifowose (1994) describes foreign exchange as a

monetary asset used on a daily basis to settle international transactions and to finance deficits in a country's balance of payments. He emphasizes that it is an important component of a country's stock of external reserve.

Right from time immemorial, a country's exchange rate and balance of payment is usually regarded as the sum of indices by which a nation's strength can be measured especially its economic strength (Orji, 2012). Paul (1996) defines balance of payments as an accounting record to all monetary transactions between a country and the rest of the world. It is the rate at which one currency exchanges for the other, and it is used to characterize the international monetary system (Iyoha, 1996). Anifowose (1994) describes foreign exchange as a monetary asset used on a daily basis to settle international transactions and to finance deficits in a country's balance of payments. He emphasizes that it is an important component of a country's stock of external reserve. Other components include holding of monetary gold and Special Drawing Rights (SDRs). He considers foreign exchange management as a conscious effort to control and use available foreign resources optimally while ensuring to build up external reserves in other to avoid external shocks attributable to dwindling of foreign exchange receipts.

### **Theoretical Review**

The theoretical basis for this study is provided by those theories, which deal with the instruments for correcting balance of payments deficits. Such theories have existed in international trade theory as far back as 1752. Detailed analysis of the theory of policy instruments for correcting balance of payments equilibrium is, however, clearly spelt out in the work of Meade (1954). Meade (1954) proposes that a country can offset adverse trends in its balance of payments by a change of financial policy. A policy of price adjustments, which involves changes in money wage and changes in the exchange rate, is devaluation. This is presently called expenditure – switching policy.

However, there is consensus in the literature on the impact of exchange rate stability neither on economy growth nor on the mechanism through which oil price fluctuations affect growth. While macro-and micro-economic analysis of exchange rate system are relied upon in the former, supply and demand analysis of the impact of changes in oil price is used in the latter. The macro-economic effects of low exchange rate volatility under the fixed exchange rate system are associated with low transactions costs for international trade and capital flow thereby contributing to higher growth. Indirectly, fixed exchange rate enhances international price countries more easily.

### **Empirical Studies**

This framework is all about the previous works related to the study at hand. This involves various findings in favor or against the subject matter. In a study of Monetary Approach of Balance of Payment in West African Monetary Zone by Adamu and Itsede (2010), using Fixed-effects OLS estimation methods. Their findings indicated that a log of GDP had a positive effect on the change in net foreign assets. This implies that a country's income plays a significant role for its net assets. The result also showed that estimated coefficient on the change in domestic credit is found to be statistically significant at 1 percent and consistent with the monetary approach of balance of payment. A negative relationship between domestic credit and net foreign asset was established for all the three models. This implies that an increase in domestic credit worsens the balance of payment; this result is consistent with theoretical explanations. Similar result was obtained by Imoisi (2012) in the case of Nigeria, where the relationship between BOP and inflation rate was insignificant while the relationship between BOP, exchange rate and interest rate was significant which is in conformity with the economic theory.

Obioma (1998) used data for 1960-1993 to test the validity of monetary approach to balance of payment adjustment for Nigeria under fixed and flexible exchange regimes. He found that an increase in domestic

credit on money stock leads to external reserves outflow or adverse balance of payment during the fixed exchange rate regime.

It was revealed from a study by Akpansung (2013), when the balance of payment of Nigeria and some other countries were indiscriminately chosen and reviewed by him. The study stated that most of the empirical studies of monetary approach reviewed established stability of money demand functions and also showed evidence of causal relationships that exist between domestic credit and balance of payments.

Olisadebe (1996), however, is of the opinion that the relationship between exchange and balance of payments arises out of international exchange, which determines the amount of payments involved in economic transactions.

The studies that supported the BOP effects of exchange rate overvaluation include Abeysinghe and Yeok (1998), MacDonald (2003), Chowdhury (1999), Anietie et al. (2004), Enrique and Nagayasu (2004), Annsofie (2005), Speller (2006), Yu (2006), Cheung, Chinn and Fujii (2007), Balogun (2007), Frankel (2007), Antonia et al. (2008), Dubas (2009), etc. Agene (1991)'s results support overvaluation of the exchange rate. Ogiogo (1996) found substantial deterioration in the balance of payments position of developing countries is caused among other factors as, worsening terms of trade, excessive imports and over valuation of the currencies. Olisadebe (1996) favored exchange rate appreciation as a means of attaining favorable balance of payments position. To Cheung, Chinn and Fujii (2007), overvaluation of the exchange rate enhances deficits in the balance of payments position through the current and capital accounts.

## **Methodology**

### **Sources of Data Collection**

To obtain reliable information that will help the researcher to ensure the effectiveness of the study in question, data were collected from only secondary sources. This data obtained from Central Bank of Nigeria (CBN) research publications and Federal office of Statistics Publications. The average rate values were used and total values for the independent variables.

### **Sampling Size And Sampling Techniques**

This study will use the data obtained from Central Bank Statistical Bulletin. These data include export earnings, import and exchange rate as the independent variables. The dependent variable is the balance of payments. The years covered include 1990-2013.

### **Model Specification**

From the hypothesis in chapter one, there is a model dependency of BOP on the macro-economic variables i.e (export earnings, import and exchange rate). Though it is rare to get a perfect relationship between two variables when interest is to study the nature of relationship repeated observation can be made to aid the study.

The data to be used in this project is showcase thus,

$$Lny = (X1, X2 \& X3)$$

Where

Lny = log of Balance of Payments

X1 = Export earnings

X2 = Import

X3 = Exchange rate

The above function specifies exponential relationship between y (dependent variable) and x (independent variables). This function can further be written as:

$$Y = f [ e (b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3)$$

## DATA PRESENTATION AND ANALYSIS

The purpose of this chapter is to present the raw data as collected and organized for the analysis through appropriate methodology from chapter three. The variables are measured as follows:

Exchange rate measured the rate at which Nigeria Naira is converted to the U.S dollar between the periods of 1990-2014. Export earnings represents all the accrued to Nigeria from the goods and services they exported, while import captured all the expenditure incurred by Nigeria in the course of importing goods and services that cannot be produced in the country. The balance of payments captured the difference between the overall statements of Nigerian economic transaction with the rest of the world with the studied periods.

### Data Presentation

Year	Export	Import	Exchange Rate	Balance Of Payments
1990	109886.10	3086.20	8.04	18498.20
1991	121535.40	45717.90	9.91	5959.60
1992	205611.70	89488.20	17.30	-65271.80
1993	218770.10	14161.20	22.05	13615.90
1994	206059.20	165629.40	21.89	-42623.30
1995	950661.40	162788.80	21.89	-195316.30
1996	1309543.40	755127.70	21.89	-53152.00
1997	1231662.70	845716.60	21.89	1076.30
1998	751856.70	837418.70	21.89	-220675.10
1999	1188969.80	862515.70	92.69	-326634.30
2000	1945723.30	985022.40	102.11	314139.20
2001	2001230.30	1358180.30	111.94	24738.70
2002	1882668.20	1512695.30	111.94	24738.70
2003	2889846.70	2080235.30	129.36	-162298

2004	4620085.20	1987045.30	133.50	1124157.20
2005	6310247.90	3792821.20	132.15	2395864.30
2006	5752747.70	4296716.40	128.65	2206500.50
2007	8126000.50	5289824.40	125.81	2124143.62
2008	9568949.20	3299095.00	118.55	3395065.84
2009	7434543.90	5047831.00	149.97	-3225065.84
2010	13009905.73	6648525.89	150.65	1162859.03
2011	19466959.54	13407126.11	154.74	2177553.08
2012	5892940.80	5624870.44	157.50	-59220072
2013	875690.50	1028194.30	157.31	410598.90

Source: National Bureau of Statistics, CBN Bullion Journal Publication, 2014.

#### Test Of Stationary Using Augmented Dickey-Fuller Unit Root Test.

Variables	Level	1 <sup>st</sup> Difference	2 <sup>nd</sup> Difference
Export	-0.3594	-4.5251	-
Import	4.5168	0.9062	-
Exchange Rate	-0.3432	-2.6629	-4.4109
BOP	-3.0559	-5.0482	-
Critical	1% = 3.8304	-3.8572	-3.8877
	5% = -3.0400	-3.0400	-3.0521
	10% = -2.6552	-2.6608	-2.6672

Augmented Dickey Fuller (ADF) Test value of export is greater than the critical value at first difference, while the exchange rate is greater at second difference. On the other hand, import is at greater level while BOP's is greater at first difference.

REGRESSION OUTPUT :EXCH = bo + b1 EXPT + b2 BOP + b3 IMPT + U

EXCH = 113584.385 + 0.550 EXP – 7146.83 BOP -0.151 IMPT.

## Findings

From the economist and statistical analysis of the regression output, this research study found the following:

1. That export earning has a strong significant relationship with the exchange rate in Nigeria both in statistical relationship term apriori expectation term. This goes a long way to explain in boosting the growth and development of Nigeria's economy.
2. That constant exchange rate fluctuation invariably devalues the worth of Nigeria naira against dollar and increased the cost of importation which transcend to inflation and high cost of living in Nigeria and as well kept on effecting the growth of the economy.
3. That importation has high significant influence on exchange rate fluctuation in Nigeria which results to deficit balance of payments. More than 65% of finished products consumed in Nigeria are imported outside the country thereby, reducing our current account which leads to favorable balance of payments for positive economic growth and development.

## Conclusion

So far Nigeria continue to neglect the local content/products and patronizing the foreign imported products, the exchange rate volatility will keep swinging to devalue the domestic currency (naira) when there is too much demand on foreign currencies. Ojo (1998), Jhingan (2002), Edwards and Yeyati (2003) suggestions states that exchange rate regime that is driven will make better economic growth since it affects the most of the economic variables studied.

## Recommendations

Foreign exchange rate fluctuation affects the growth and development of the Nigerian economy with the relationship on the selected macro-economic variables that contributes immensely to surplus balance of payments where there will be more exportations than importations. Olisadebe (1991) traced part of the problem of effective exchange rate management to fraudulent practices by the operators of the Foreign Exchange Rate (FOREX) market; therefore there is need for the policy makers, stakeholders and the government to pay more attention on the practitioners/professionals of the foreign exchange rate transactions.

## References

1. Abeysinghe, A. and T. L. Yeok (1998), "Exchange Rate Appreciation and Export Competitiveness: The Case of Singapore", *Applied Economies*, 30, pp. 51-55.
2. Anifowose, O.K.(1994). "Allocation and Management of foreign exchange, The Nigerian Experience" *The CBN Bulletin*, Vol. 18, No 4.
3. Anuanwaokoro, M. (1999). *Theory and Policy of Money and Banking*. Hosanna Publication.
4. Akpansung A. O. (2013). "A Review of Empirical Literature on Balance of Payments as a Monetary Phenomenon". *Journal of Emerging Trends in Economics and Management Sciences*. Amsterdam: North Holland.
5. Asogwa, F.O. and Okeke, I. M. (2013). The Impact of Exchange Rate Dynamics on Capital Inflows in Nigeria (1970-2010 ). Information and Knowledge Management ISSN 2224-5758 (Paper) ISSN 2224-896X (Online) Vol.3, No.8, 2013 [www.iiste.org](http://www.iiste.org).
6. Central Bank of Nigeria (2011) *Economic Report, Policy Measures*.
7. Central Bank of Nigeria (2010), *The Foreign Exchange Market in Nigeria*. [Online]. Available: <http://www.cenbank.org/intops/fxmarket.asp>.
8. Central Bank of Nigeria (2011), *The Foreign Exchange Market in Nigeria*. [Online]. Available: <http://www.cenbank.org/intops/fxmarket.asp>.
9. Dubas J. M. (2009). The Importance of the Exchange Rate Regime in Limiting Misalignment. *World Development*, 37 (10): 1612-1622.

10. Edwards, S and Yeyati, E.L (2003), "Flexible Exchange Rate as shock absorber"
11. *NBER Working Paper Series 9867*, National Bureau of economic research.
12. Imoisi, A. I. (2012) "Trends in Nigeria's Balance of Payments: an Empirical Analysis from 1970-2010"; *European Journal of Business and Management*. Vol 4, No.21.
13. Jimoh, A. (2004), "The Monetary Approach to Exchange Rate Determination: Evidence from Nigeria". *Journal of Economic Cooperation*, 25(2):109- 130.
14. Marston, R. (1987), "Real Exchange Rates and Productivity Growth in the United States and Japan", in: S. Arndt and J. D. Richardson (eds.), *Real-Financing Linkages among Open Economies*, MIT Press Cambridge, MA.
15. Mordi, N. O. (2006). Challenges of Exchange Rate Volatility in Economic Management in Nigeria", In *The Dynamics of Exchange Rate in Nigeria*. *CBN Bullion*, Vol. 30, No. 3, pp. 17-25.
16. Obadan, M. I. (1994). *Real Exchange Rates in Nigeria*", National Center for Economic Management and Administration, Ibadan Obadan, M. I. (2006), "Overview of Exchange Rate Management in Nigeria from 1986 to Date", In *The Dynamics of Exchange Rate in Nigeria*, *Central Bank of Nigeria Bullion*, Vol. 30, No. 3, pp. 1-9.
17. Obioma, E. C. (1998). "Balance of Payments and Exchange Rate Management in Nigeria: Empirical Evidence from the Monetary Approach". *NCEMA Policy Analysis Series*.Vol.4; No. 2. Technical Guide. *Journal of International Economics*. 7:251-68.
18. Olisadebe, E.U. (1991). Appraisal of recent exchange rate policy measure in Nigeria, *CBN economic and financial review*.Vol.29, No.2.
19. Umoru, D. & Odjegba, O.P. (2013). Exchange rate misalignment and balance of payment adjustment in Nigeria. *European Scientific Journal* May 2013 edition vol.9, No.13 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431 260.