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Effect of Exchange Rate Volatility on Nigeria Economy (1991-2010)

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Abstract
The statistical test evaluated on 27 years time series data proved the significant impact of foreign exchange rate on Nigeria economy. And this exchange rate has continuously fluctuating, immerging, the country's foreign exchange rate volatility that favour Nigeria between 1981 and 1991 rises from N0.64 to N9.75) encouraged the nation's exportation. This continue, in 1992, the exchange rate rose to N17 to a US Dollar and in 1995 it increased to N21.89 but from 2003 to 2008 it reduces from N135.41 to N117.78 while later rises again to N147.20 and N150.3 in 200 and 2010 respectively t a US Dollar. At this period exportation was totally discouraged and gradually importation was later encouraged to meet the vast population. To control this fluctuation there is need to implement foreign exchange rate management policies which must be concerned with both the foreign sectors and domestic balance of the economy. This can be achieved if government focuses more attention on policies that will affect the accounts in balance of payment. Outcome of this paper work as proved it with decrease in the GDP by N0.02 as the export rate increases; that is the current exchange rate policy did not really affect the development of oil and non-oil export. Thus there is the need for proper management of the Nigeria foreign policy so as to achieve good level of exportation.
Keywords: Exchange Rate, Nigeria, Economic Growth

Background to Study

Exchange rate indicates the values of two currencies in terms of another. It is the price of one currency in terms of another currency. Customarily, exchange rate is defined as the price of one unit of the foreign currency in terms of the domestic currency Mejekomi (2000).The issue of exchange rate came in as a result of unequal resource endowed in different parts of the world which demand the need for inter-dependence. In international transactions where countries require commodities and services for development purposes, they have t settle bills by paying for their purchases and balance for their sales. To effect such transactions, an international acceptable mode of payment is required and this brought about the idea of foreign exchange. Thus, the need for foreign exchange policy involves choosing an exchange rate system and determining the particular rate at which foreign exchange transactions will take place.

The instability in exchange rate has been happening started from the period prior to the independence when Nigeria's currency was closely tied to the British Pound sterling giving it colonial antecedent. The currency was minted in United Kingdom where the exchange rate was also determined. On June 29th, 1972 Nigeria terminated the fixed relationship between her currency and the Pound sterling, introduced the naira on January 1st 1973 and started managing the Naira exchange rate independently in April, 1974 through a policy of "progressive Appreciation". The reason was that giving the level of development and the structure of the economy, exchange rate behaviour was seen as an important link between inflation and monetary policy as well as the mechanism that brings long-term balance of payment adjustment.

Exchange rate instability emerged as one of the controversial issues n developing countries in 1980's and the instrumental policy was made with intense opposition to devaluation for fear of its inflationary impact, among other effects. Nigeria faced such a situation and there ahs been interest, therefore, in economic performance as a result of exchange rate volatility in the process. This volatility is a topiBcal issue. It is a key determinant that is affecting price signalsin a market driven economy. It is generally accepted that exchange rate is a variable, which affect the rate of economic activity and developmental impact on investments, savings, production and consumption and inflation.

In determining exchange rate volatility, it is important to consider the country's economic structure and international characteristics. The Nigerian economy has been over dependent on a single commodity - petroleum. This has subjected the economy to instabilities due to the policies in the international market for petroleum. Consequently, this has been posing serious socio-economic problems on the developmental aspiration of the national economy due to the unfavorable balance of payments necessitated by huge expenditures on imported inputs.

In this connection, several measures have been embarked upon by successive administrations to rectify the structural imbalance in the nation's economy. Undoubtedly, these policies affected all organizations operating in Nigeria. The transformation engendered by Autonomous Foreign Exchange Market (AFEM) necessitated adjustment by these organizations.

To achieve appropriate level of exchange rate, one of two approaches is usually adopted. The authority can either fix it administratively or allow them to be determined by the market forces. The option that is eventually chosen usually reflects a country's historical experience and the monetary authorities' perception f the efficacy of a particular line of action in achieving the set of macroeconomics objectives.

However, proper and timely adjustment cannot be made unless organizations monitor the environment where they operate with a view to identifying the factor capable of improvements. It therefore becomes important to look critically at the exchange rate volatility; its impact on Nigeria economy.

Statement of The Problem

It appeared that Nigeria's exchange rate volatility tends to affect valuation of the Naira. This in turn encouraged imports and discourages exports and over dependence on imported inputs. The overriding exchange rate management was made concerned apparently with medium and long term balance of payment objectives.
Impact of Exchange Rate Volatility on Economic Growth of Nigeria

Objectives of The Study

The objective of this study is to examine the impact of foreign exchange rate volatility on economic growth in Nigeria between 1981 and 2008. In order to achieve this, the following are the specific objectives:

1. To check the reality of relationship between exchange rate and Nigeria economy.
2. To examine the impact of exchange rate volatility on Nigeria economy growth.
3. To check of the existence of autocorrelation in validating the estimability of economic indicators (parameters).

Hypothesis

H_o. There is no significant impact of exchange rate volatility on Nigerian economy growth.
H_I. There is significant impact of exchange rate volatility on Nigerian economy growth.

Literature 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 monetary 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 model opines that a situation of falling prices with a given nominal money supply results in exchange rate depreciation, while the traditional flow model 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 withoutany change in the initial determined factors. Exchange rate can adversely affect the ability to import and therefore manufacturing output. Volatilities in exchange rate will cause instability in purchasing power and hence, negatively impact on investment in import of manufacturing inputs. On the other hand, the effect on manufacturing output and overall income level will also affect investment in import of inputs and invariably the exchange rate. This is because among the determining factors of the rate of exchange are the demand for foreign exchange the supply itself being influenced by an economy's productivity level.

In macroeconomic management, exchange rate policy as 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. It is not surprising since its behavior is said to determine the behaviour of several other macroeconomic variables (Oyejide, 1985). It is even more so for Nigeria which had embarked on a course of rapid economic growth with attendant high import dependency. The manufacturing sector plays as catalytic role in a modern economy and has many dynamic benefits that are crucial for economic transformation and also in achieving sustainable economic growth. Nigeria being an import dependent nation particularly for here capital goods and considering he centrality of the rate of exchange of such a country's currency to her trading partner's currency, a good number of writers have expressed their interest and position on this important subject. Interest in this area has significantly increased over the years as being generated by the volatilities and the depreciating nature of such an important economic variable as well as its effect on other sectors of the economy.

More recent data provided by Ekanem (1997) show that manufacturing companies are operating below 40% capacity and they are import dependent. For several years, the manufacturing sector has concentrated basically on the import of raw materials. This seems to be attributable to the overcrowding of this important sector of the Nigerian economy by multinational corporations. As a result, this sector has been deviled by high interest rates, rising inflation, naira depreciation, foreign shortages and consumer's strong resistance to local products. Perhaps one f the greatest development challenges that have confronted Nigeria since 1986 when the fixed exchange rate system was abolished and replaced with the flexible exchange rate system is the designing of policy measures to enhance exchange rate appreciation in Nigeria. This particularly the case after the abysmal failure of the Structural Adjustment Programme (SAP) devaluation policy package designed to aggressively promote export in Nigeria.

Similarly, Nigeria as an import dependent nation particularly for here capital goods and considering the centrality of the rate of exchange of such a country's currency to her trading partner's currency, a good number of writers have expressed their interest and position on this important subject. Interest in this area has significantly increased over the years as being generated by the volatilities and the depreciating nature of such an important economic variable as well as its effect on other sectors of the economy. As a result, this sector has been deviled by high interest rates; rising inflation, naira depreciation, foreign shortages and consumer's are in products higher prices. Olisadebe (1991) expressed that the naira exchange rate given its macroeconomic impact especially Nigeria is perhaps one of the most widely discussed topic today. According to Olisadebe (1991), one worrisome development in the naira exchange rate in recent years, especially since the introduction of the structural Adjustment Programme (SAP) in 1986 is that it has continued to depreciate as a result of which some people have called for fixing of the exchange rate even at par with the United States Dollar. On the equilibrium for exchange rate, the author remarked that such rate ensures the simultaneous attainment for internal and external balance.

Foreign Exchange Volatility and Export Development

Foreign exchange market is designed to facilitate the operation of the international money system. It is the mechanism, by which one is able to transfer purchasing power, provided credit for international trade transaction, and provides a means of avoiding the risk of exchange re-volatility.

According to David Eiteman and Arthur Sotne (1983), 'transfer of purchasing power is necessary because international trade and capital transactions usually involves parties resident in countries with different national currencies, that each party eventually would like to hold its own currency, although the trade could be involve in any continent currency'. For instance, a Nigerian, an exporter might sell palm oil to an American firm in the Nigeria naira on the U. S. Dollars. The exact currency to be used is to be agreed upon by both parties beforehand. Whether Naira or Dollars were to be used the important thing is that one of the parties would need to transfer purchasing power to or from his own national currency. If dollars were to be used, the American importer would need to transfer purchasing power from Dollars to Naira to effect payment; it is the responsibility of the foreign exchange market to carry out these forms of purchasing power transfer transaction. On the other hand, export development strategy is an industrialization and trade strategy, which encourages production for exports. However, it does not necessarily imply a bias in favor of exports. It is a policy that is neutral in its bias between production for export and that for domestic consumption. Export implies a regime in which incentive for export and import substitution activities are equalized. It permits a country to establish an economic of efficient size and to maintain long production runs.

Exports development enables a country to realize the benefits of international specialization according to comparative advantage. It provides a stimulus to efficiency as a result of exposure of foreign exchange competition technology and a prospect of worldwide market for product. Export development contributes more import substitution to the objectives of greater employment of surplus labor and improvement in income distribution.

Moreover, no discussion on export financing can be completed without a word being said about foreign exchange, it is so important to any international transaction. And involving in export one could lose money unnecessarily if one did not safeguard himself against volatility in foreign exchange rate (the price of currency) vary mainly as a result of volatility in demand for a particular currency. Many factors contribute to the volatility; among them include inflation, interest rate, political events and economic indicators. Foreign exchange rates are important in the foreign exchange market as spot or forward. Spot rate is a rate of exchange at which foreign currency is bought or sold for delivery in use for day - to - day dealing in currencies. The forward rate is a re quoted now for the purchase or sale of a stated amount of foreign currency at a specified time in the future, no matter how the spot rate might change in the intervening period. Banks arrive or adding a discount to the spot depend ing on interest rate in the economy concerned. Bank offering forward foreign exchange contracts use forward rates.

Empirical Studies on the Impact of Foreign Exchange Rate Volatility one Economic Growth

Writer of various background and discipline have attempted to probe in foreign exchange policies on one hand and export development on the other hand. In fact some have analyzed while other criticized the relationship and measure the impact of foreign exchange volatility and incessant change on (FOREX) as it relate to export growth. It is however, interesting to know that scholars have continued to make research into this area, as it is perceived to be the backbone of the economy.

Prior to the introduction of IMF - World Bank - sponsored structural adjustment programme in 1986, the key objective of SAP according to Ayadi, Adegbite (2008) were to: restructured and diversify the productive base of the economy so as to reduce dependence on the oil export and imports;

Foreign exchange is one of the resources particularly in a developing country by Nkwaopara (1985). He stressed that in an effort to promote growth via export development, the developing countries have difficulties in their balance of payment which are due from high import bills of capital goods and low receipts from exports. This often results into trade deficit.

In buttressing the above position, Duke (1963) articulated that in the source of development the rate of growth of national output and the demand for imports tends to exceed the export based capacity especially during the early phase when the increase in investment is sizable and structural change are considerable, from Duku's observation. It is instructive to note that unless a profit management framework of foreign exchange is articulated a country runs the risk of balance of payment problems. Moreover a country can only optimize the advantages of international trade of appropriate foreign exchange policy and management is initiated.

It should be noted however, that the postulation position of both Duku and Nkowpara are very much relevant in the world third countries of which Nigeria is inclusive. Foreign exchange as define by the international monetary fund (IMF) to include monetary claims on foreigner in the form of bank deposits, treasury bills, short-term and long-term government security and other claims usable in the events of balance of payment deficit, including non marketable claims arising from inter-central bank and inter-government arrangement, without regard to whether the claims dominated in currency from debtor or creditor. Looking at this definition in everybody life, foreign exchange means foreign currency or another financial instrument acceptable as a means of exchange or payment. This, according to the Federal Republic of Nigeria Exchange Control Manuals, Foreign Currency means any currency other than Nigeria currency and includes any note as coins which are or have any time been legal tender in any territory outside Nigeria, postal order, draft letter of credit and travelers' cheques payable or expressed otherwise than in Nigeria currency.

Foreign exchange is considered simply as a means of instrument of settlement in international trade. According to the definition given by IMF and the Federal Republic Controls Manuals, foreign exchange forms part of foreign reserves. The variable that makes up reserves determined to a large extent the quantity of foreign exchange available to a country. Therefore, any policy initiated by government as the quantity or direction of these variable will constitute foreign exchange management as any policy that seek define foreign exchange management as any policy that seek to influence the supply and demand for such currencies is a derived one influenced by a countries balance of payment disequilibrium position in recent time. It has become necessary to examine recent policy measures in foreign exchange management.

Specifically, policy measure from 1981 to 2004 will be considered. The objective is to determine how these can affect the availability of foreign exchange to the nation and their subsequent influence on foreign investment. Foreign exchange as part of economic science that deals with the ways and method by which right to wealth, expressed in the currency of one country is converted into right wealth expressed in the currency of another country. The role of foreign exchange in economic growth is so important. The classical and non-classical economics attached so much importance to foreign exchange transaction in a country development. It is regarded as an engine to growth. However, foreign exchange has led to international inequality, whereby the rich countries became richer at the expense of the poor countries. Despite the importance an advantage of foreign exchange in a country still have some negative impact on economy development of a country. In any country it will be difficult to achieve the aims and objectives under exchange rate volatility. Foreign exchange can involve someone in some degree of risk, as an exporter trading under volatility exchange could be losing money unnecessarily.

It has been argued by Clark (1973) and Ethier (1973), that floating foreign exchanges are usually characterized by unanticipated exchange rate volatility which commonly subject both exporters and importers to greater exchange rate. In the light of such risk, they argued that exporters and importers are willing to engage in international trade. On the other hand, Brade and Maindez (1988), reveals from the perspective of government inducement arising from exchange rate volatility, suppose argument are based on the erection of generalized or sectoral trade barriers to offset the establishing effect of change to foreign exchange rate that do not changes in incomes, prices and other fundamental determination of comparative advantage and international trade. It ahs been said that foreign exchange volatility do reduce the volume and restrict the extent which trade bases can be diversified. The tight foreign exchange position lied to the emergency of trade areas in 1982 and subsequent rapid accumulation of debt which country was unable to settle the country become no longer credit worthy and all line of credit in the international trade were blocked say Ntekop (1997)

Evolution of Nigeria's exchange rate policy in 1970 - 1985, was characterized by the demise of the Bretton Woods system and an attempt by the authorities to develop a domestic exchange rate system. The first attempt in the direction was the introduction of Nigeria pound in 1959 with its value fixed at par with the British pound sterling and at 2.80 per united state dollar (Chizea, 1993). In the 1980s, the crash of oil prices and prices of primary commodities resulted in a severe balance of payments deficit as the tempo of the nation's high import bills kept a rising profile, while the backlog of unremitted foreign exchange procurements already paid for in naira by companies and individuals pilled up a the Central Bank of Nigeria due to acute shortage of foreign exchange (CBN, 1986). Given this scenario of acute scarcity of foreign exchange, and as a further deregulation measure, in October 1985, the law establishing the domiciliary account scheme was enacted with the intent to boost the volume of foreign exchange attractable from the private sector. This invitation for private sector in foreign exchange generation was a welcome development.

Research Methodology

The model will make use of GDP as the explained variable, the explanatory variables are; exchange rate, import rate, export rate, CPI.

Method of Data collection

The source of data for this study was from Central Bank of Nigeria (CBN) Statistical Bulletin. They are time-series secondary data assembled from CBN and that ranges from 1991-2010, covering a total number of 20 years.

Sample size

The duration of my research was basically from 1991-2010 which is in the range of 20yrs. This duration was used because it is detailed enough to give a good result and analysis. This study employs annual data on the GDP, exchange rate, import rate, export rate, CPI for Nigeria over the period 1981 to 2008. Data were obtained from the CBN Statistical Bulletin.

Method of Data Presentation and Analysis

The operational methodology adopted is the multiple regression analysis with Ordinary Least squares (OLS) econometric techniques and a time series secondary data from 1981 to 2008, which were obtained from various sources of financial sectors were used to for the analysis.

Model Specification

The model to be considered will seek to scrutinize the statistical relationship that exists between the variables under consideration. Therefore, the models for this study will be defined as:

Y = F (X_1, X_2, X_3, X_4). That is Y is a function of xi, thus

Y = F (X_1, X_2, X_3, X_4)... (1)

Where; Y represent the GDP (dependent variable) and X_1, X_2, X_3, and X_4 are independent variables.

This can be specifically stated as;

GDP = F (exchange rate, import rate, export rate, CPI,)................. (2)

Thus the multiple linear regression equation based on the above functional relation will be:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \quad \text{.........................} \quad (3)$$

U_t called mu is the stochastic error term. 0 is the slope of the equation while 1,2,1 represents the coefficient of independent variables. The inclusion o f the error term is to cover other variables which are relevant but are not included in the model. The model is multivariate in nature since it includes there variables (i.e. multiple regression).

Data Presentation And Analysis

Data Presentation

The descriptive part of this analysis includes tabular form of Gross Domestic Product, foreign exchange and other economic indicators as shown in Table 1. The span of these data covers 20 years and above of some economic indicators and foreign exchange rate of Nigeria. The graphical presentations of figure 1 and 2 were also employed to portray the trend of Nigeria foreign trade and volatility in foreign exchange rate.

Trend Analysis of Nigeria Foreign Trade and GDP

From table 1 and figure 1 show the trends of Nigeria foreign exchange trade and economic factors considered for solving the research *problems. On* the horizontal or x-axis, number 1 to 20 represent the years from 1991 to 2010 respectively. While on the y-axis, the amount realized during the period were rated in millions of naira.

Volatility in Nigeria Exchange Rate and Oher Economic Indicators: 1991-2010

Year	GDP(N `m)	Exchange Rate (N)	Import (N 'm)	Export N 'm) (N)	Interest Rate	Consumer Price (Index (N)
1991	265379.1	9.7515	165629.4	121535.4	20.01	330.9
1992	271365.5	19.7515	205611.7	205611.7	29.8	
1993	274833.3	19.6609	218770.1	218770.1	18.32	
1994	295450.6	22.6309	206059.2	206059.2	21.0	
1995	281407.4	212.8861	950661.4	950661.4	20.18	
1996	293745.4	79.60	1309543	1309543	19.74	
1997	302022.5	74.625	1241663	1241663	13.54	
1998	310890.1	84.3679	75185.7	75185.7	18.29	
1999	312183.5	92.5284	1188970	1188970	21.32	
2000	329175.7	109.55	1945723	1945723	17.98	
2001	356994.3	112.4864	1867954	1867954	18.29	
2002	433203.5	126.40	1744178	1744178	24.4	
2003	477533	135.41	3087886	3087886	20.48	
2004	527576	132.40	11023.3	11023.3	19.15	
2005	561931.4	131.10	8206.4	8206.4	17.85	
2006	595821.6	128.14	7502.5	7502.5	16.98	
2007	634251.1	125.07	.	.	.	
2008	672202.6	117.78	. .	.	.	
2009	718977.3	147.27	.	.	.	
2010	334741.7	150.30	-	-	-	

Source: The CBN's Statistical Bulletins 2006 and 2008. Additional source of data suggested by the IMF including Nigeria Customs Services, NPC, NBS and the prospectus for vision 20:2020 by the Financial advisers to the Federal Republic of Nigeria in connection with Citigro Global Market limited Duetsche Bank, Barclays Capital FBN Capital.

From the figure 1 and 2, it can be observed that the flowing of foreign trade (import and export) has an impact on the GDP which at the long run affect exchange rate of the country. It can be noted that the nation's exportation has been rising and filling from 1991 to year 2003 where it started falling drastically till 2009 without rising again as a result of country's reliance majorly on imported goods and services. The negative volatility was experience as a result of the nation's negligence to encouraging local industries or productions to meet international standard. The entire citizen of Nigeria both the rich and poor now prefer imported goods and services to Nigeria locally made items instead of patronizing them to compete with imported and even encourage them to producing for exportation.

Evaluation of Correlation and Significant Effects

The F- test;

Level of significant = 95%

Critical value: Fvi, v2 at 95% = 4.60

Decision rule: Reject Ho If F - cal > F - tab

From the table 3, F - cal is 24.580. This is extracted from the model of least residual error.

Therefore, F -cal > F- tab, we then reject Ho

Since the null hypothesis is rejected. We therefore conclude that there is significant impact of exchange rate volatility on Nigeria economy growth.

Table 2
*Model Summary**

Model	R	R Square	Adjusted R - Square	Std. Error of the Estimate	Durbin-Watson
1	.798	.637	.611	70252.49440	
2	.931	.931	.920	31824.38143	
3	.976	.953	.942	27236.97719	
4	.977	.954	.938	28072.87392	1.672

a. Predictor: (Constant), Exchange Rate
b. Predictor: (Constant), Exchange Rate, Import
c. Predictor: (Constant), Exchange Rate, Import, Export
d. Predictor: (Constant), Exchange Rate, Import Export, CPI
e. Dependent Variable: GDP

* * Please note that some digits used in the SPSS analysis are in millions of naira and they were written in standard form for example 1.213E11 means #21300000000.00.

Table 3
ANOVA

Model	Sum of Square	df	Means Square	F	Sig
1 Regression Residual	1.213E11 6.910E10	1 14	T.2T3E11	24.580 4.935E9	.000
Total	1.904E11	15			
2 Regression Residual	1.772E11 1.317E10	2 13	8.862E11	87.502 1.013E9	.000
Total	1.904E11	15			
3 Regression Residual	1.815E11	3	6.050E10	81.555	.000
Total					
4 Regression Residual	1.817E11 B.669E9	4 11	4.543E10	57.652 7.881 E8	.000
Total	**1.904E11**	**15**			

a. Predictor: (Constant), Exchange Rate
b. Predictor: (Constant), Exchange Rate, Import
c. Predictor: (Constant), Exchange Rate, Import, Export
d. Predictor: (Constant), Exchange Rate, Import Export, CPI
e. Dependent Variable: GDP

Table 4

Coefficients"

Model	**Unstandardized**	**Std Error**	**Standardized**	**T**	**Sig**
	Coefficients B		**Coefficients**		
			Beta		
1 Constant	214312.571	35645.190		6.012	.000"
Exchange Rate	1892.286	381.676	.798	4.958	.000
2 Constant	236845.804	16429.511		14.416	.000.
Exchange Rate import	-506.745 .158	366.216 .021	-.214 1.148	-1.384 7.431	190 .000
3 Constant	239601.097	14108.126		16.983	.000
Exchange Rate Import Export	-23.050 .137 -.022	372.747 .020 .009	-.010 .997 -.180	-.062 6.805 -2.397	.952 .000 .034
4 Constant	239372.117	14547.190		16.455	.000
Exchange Rate Import Export CPI	4.898 .131 -.020 .788	387.606 .024 .010 1.449	.002 .948 -.168 .053	.013 5.405 -2.094 .544	.990 .000 .060 .597

a. Dependent Variable: GPD

Findings and Interpretation

From the ANOVA table 3, the probability of the regression coefficients P in the population as the probability p of the estimate 0.000 <0.005 proved the significant of the coefficient calculated. More so, Durbin Watson column of model summary in table 2 proved that i ≠ j and 0<p<1 and 0<d<2 (d = 1.672) meaning that there is a level of positive autocorrelation. This Durbin Watson method of testing autocorrelation coefficient confirmed the rejection of assumption that the estimability of the disturbance terms of independence variables used to estimate the multiple linear regression

$\mathbf{Y = P_0 + pi\ Xi + P_2X_2 + U_T}$ is equal to zero [i.e. E (UiUj) = 0]

Thus there is an existence of autocorrelation that is, the result of the estimated multiple ^J regression is not free from disturbance or stochastic error term.

Correlation of Parameters in F – Test

The multiple correlation of GDP and independent variables (Exchange rate, import, export, and CPI are estimated as; R = 0.798, 0.965, 0.976, and 0.977 respectively. This result of the R^2 indicates very strong, positive, degrees of relationship between the GDP and the exchange rate, import, export and Consumer Price Index. While the corresponding coefficient of determination R^2: 0.637, 0.931, 0.953 and 0.954 indicate that:

- The independent variable, exchange rate is able to explain the GDP (dependent variable) up to 64%
- The import rate (independent variable), is able to explain the GDP (dependent variable) up to 93%
- The export rate (independent variable), is able to explain the GDP (dependent variable) up to 95%.
- The Consumer Price Index (independent variable), is able to explain the GDP (dependent variable) up to 95%. While 36%, 7%, 5%, 5% of the variability in GDP is accounted for by factors (disturbance errors) which cannot be explained rate, import, export and Consumer Price Index respectively.

F - Test: The best model that was used for this analysis can be observed from the result of analysis of variance (ANOVA) in table 3. Model 1 is contain the least value of F - calculated (24.58 and therefore considered to be the best linear unbiased estimate (BLUE) which is used for the analysis.

Therefore, the regression coefficients;

β_0 (constant) β_0 = 239372.117 β_i = 4.898, β_3 = 0.020, β_4 = 0.788 will result to the multiple regression result;

$Y = 239372.117 + 4.898_{Xi} + 0.131x_3 - 0.020x_{3+}$ 0.788 $5x_4$- 0.020 (export) + 0.788 (CPI)

The outcome of this regression result confirmed the positive relationship between the GDP and the independent variables except the export. This means that

- There is positive relationship between GDP and exchange rate that is, when the exchange rate increases by one percent, GDP increase as by 4.898% regardless of other independent parameters.
- There is relationship between GDP and export rate that is, when the import rate increases by one percent, GDP increase as by 0.131% regardless of other economic indicators Dependency.
- There is negative relationship between GDP and export rate that is, when the import rate increases by one percent, GDP increase as by 0.020% regardless of other independent parameters.
- Finally, there is positive relationship between GDP and CPI rate that is, when the consumer price index rate increases (CPI) by one percent, GDP rate increases by 0.788%, regardless of other independent parameter.

Conclusion of The Study

Obvious determined by many variables in the other than exchange rate which pre-devalues school of thought or the apostle of SAP have resolutely supported. It can be observed that in 1992 the exchange rate rose to N17 to a dollar and in 1995 it increased to N21.89 but from 2003 to 2008 it reduces from N135.41 to N117.78 while later rises again to N147.20 and N150.3 in 2009 and 2010 respectively to a dollar. At this period exportation was totally discouraged and gradually importation was later encouraged to meet the vast population. The mining and quarrying, manufacturing and processing sub-sector accounted for decrease in proportion of returns when the total cumulative foreign exchange rate in the economy increased. Hence in the face of relatively on stable oil revenues, the real effective rate gradually appreciated in competiveness. In some way the exchange rate policy did not contribute to the development of non-oil export. Thus there is the need for proper management of the Nigeria foreign policy so as to achieve unproved level of export. The main attempt of this study has been to focus on the impact of exchange rate volatility on economic growth in Nigeria. In conclusion, having validated the significant of the relationship between the GDP, export and exchange and other variables government should reactivate non-oil sectors of the economic to control the exchange rate volatility.

Policy Recommendation

The inherent to e asked is 'what should be done to stabilize the exchange rate volatility on the macro-economic variables in Nigeria. To answer the question, the following recommendations are preferred.

1. Foreign exchange management policies must concern themselves with both the foreign sector and domestic balance of the economy. This can be achieved if government focuses more attention on policies that will affect the accounts in balance of payment.
2. It is also recommended that further study on more technology should be made provisions for by both he public and private sector for improvement on the level of our productivity that later add to our foreign transaction.
3. Also, the government should try to check the floating exchange rate usually characterized with unanticipated exchange rate volatility, which is subject to both exporter and importer.
4. The exchange rate risk discourages them from engaging in international trade. And also, government should try also to desist from managing foreign exchange in line with foreign reserve position.

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