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An Econometric Evaluation of the Variation effect of the Nigerian Rate of Exchange on the Economic Progression

Adebukunola Olugbenga. S[1]
Department of Statistics,
D. S Adegbenro (ICT) Polytechnic, Itori – Ewekoro,
Ogun State, Nigeria

Akinwunmi Oluwafemi. O[2]
Department of computer Science
D. S Adegbenro (ICT) Polytechnic, Itori – Ewekoro,
Ogun State, Nigeria

Peters Olatunji. S[3]
Department of Accountancy
D. S Adegbenro (ICT) Polytechnic, Itori – Ewekoro,
Ogun State, Nigeria

Shorinmade Adewole. G[4]
Department of Accountancy
D. S Adegbenro (ICT) Polytechnic, Itori – Ewekoro,
Ogun State, Nigeria

Abstract:- This research work investigated an econometric evaluation of the variation effect of the Nigerian rate of exchange on the economic progression between the years 1986-2017. A secondary source of data was employed in this work, which was extracted from the National Bureau Statistical Bulletin published by the Central Bank of Nigeria. Maximum Likelihood estimation of the R-software was carried out to evaluate the parameter estimate of the multiple regression coefficients and analyzed the influence of the explanatory variables (Gross Domestic Product, Unemployment and Inflation on the rate of Exchange). It was observed that the Gross Domestic Product and Unemployment rate influenced negatively on the Exchange rate but significant with (β = -1.646, t = -2.409, sig.val = 0.0228) and (β = - 0.8602, t = -3.302, sig.val = 0.00263) respectively. Nevertheless Inflation rate had positive influence on the rate of Exchange but not significant with (β = 1.311, t = 0.852, sig.val = 0.40122). The Coefficient of determination (R^2 = 82.7) implies that the variation of the Nigerian rate of exchange has significant effect on the economic progression between the years 1986-2017. However, the paper recommends the following; a control of the sequential rising of inflation so as to have a stabilized rate of exchange and a promising economy for the citizens, adequate security, effective fiscal and monetary policies, as well as the provision of infrastructural facilities so that foreign investors will be attracted to invest in Nigeria.

Keywords:- *Economic Instability, Rate of Exchange, Inflation, Gross Domestic Product.*

I. INTRODUCTION

The Rate of Exchange implies the price of the currency of a country over other currencies. It is the determinants of the relative prices of domestic and foreign goods, also the capacity of external sectors participation in the international trade. The rate of exchange and rate of interest continues to be important factors in the International trade. According to Ewa (2011), it was accepted that the rate of exchange of the naira was stable between 1973 and 1979 during the oil progressive period and then agricultural produces amounted for over 70% of the economy gross domestic products (GDP). The lack of continuity in the policies on the rate of exchange brought about the unstable of the naira rate (Gbosi, 2005).

According to Benson and Victor, (2012) and Aliyu, (2011), despite the strategies put in place by the government to achieve a stable rate of exchange, the naira continues to depreciate with time. Macroeconomic indicators are instruments used to forecast and interpret current or future investments possibilities and to determine the overall healthiness of a nation, (Aliyu, 2011). However these instruments are released by the government and non-profit organizations on yearly bases.

This research study proposes to investigate an econometric evaluation of the variation effect of the Nigerian rate of exchange on the economic progression between the years 1986-2017 with the research hypothesis. **Ho:** variation in the Nigerian rate of exchange has no significant effect on the economic progression from 1986-2017

II. STATEMENT OF THE PROBLEM

According to past researches by various researchers using various macroeconomic indicators to justify the effect of rate of exchange on the economic progression, it was posited that there is much significant effect on the economy. However, Asher (2012) posited that the impact that rate of exchange fluctuation has effect on the Nigeria economic growth for period of 1980 – 2010. Akpan (2008) discovered that positive relationship exists between exchange rate and economic growth for the period of 1970-2003.

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However based on results observed by the different researchers based on the macroeconomic indicators and the period of years, this research work is aimed at investigating the effect of some macro-economic indicators (Rate of Inflation, Gross Domestic Product, and Rate of Unemployment) on the variation in Rate of Exchange for the period of 1987-2017. **Ho:** variation in the Nigerian rate of exchange has no significant effect on the economic progression from 1986-2017.

- *Nigerian Economy*

The Nigerian economy as generally described is a developing nation with over 200 million people with different ethnic group is been faced from the onset with the problem of economic instability. According to the Oxford dictionary (6th edition) defined instability as a situation in which things are likely to change or fails suddenly. Before the discovery, exploration and exportation of oils in the late 1960's and early 1970's the Nigeria economy was purely agrarian. Agriculture was the major sources of employment for more than 70% of the population and the major source of foreign exchange. However with the advent of oil came the neglects of agriculture as a result of lack of visionary leaders and this worsened the state of the economic situation putting the economic in total disarray and a dependent nation on others. The economy became a mono-product economy and oil became the main stay of the economy providing more than 90% of the foreign exchange. (Economy of Nigeria Wikipedia)

The Nigerian economy has been polarized with the inability of the government to raise the standard of living of the average Nigerian beyond poverty level coupled with massive unemployment which has dampened the morals of some of the Nigerian people. According to Odogwu (2012) the Nigeria economy witnesses some transformation in the contribution to its GDP through telecommunication, banking and films industry. However as a result of this the Nigeria economy added up to 89% growth to its GDP, making it the largest economy in Africa, yet the economy is still faced with the problem of instability.

Furthermore, the fact that the Nigeria economy is a determinant of the foreign earnings through the world price oil, however the recent fluctuation and fall in world price oil as further crippled the economy. Ajayi (2007) noted that lack of infrastructural development, resources misappropriation and corruption, lack of integration of macroeconomic plans and absence of harmonization and coordination of fiscal policies are causes of Nigerian economic instability, Onoh (2007) stated that gross mismanagement, misappropriation of public funds, impudent spending and weak sectoral linkages among other socio-economic maladies had contributed to the instability of the Nigeria economy.

The change in leadership over the years has brought about weak policies and economic performance which has caused a huge setback to the nation economic development.

According to Akuta (2009), once a new government takes over power, it usually abandons previous government agenda and programmes. This inconsistency has created ways of siphoning public funds thereby causing instability in the Nigeria economic growth and as well setting the people and the nation backwards socially and developmentally.

The state of the nation continues to create great worries among international agencies. However the Transparency International has ranked Nigeria the 136th most corrupt country in the world and the 3rd most corrupt in West Africa (Leadership Newspaper, 4th Dec, 2014). Although the federal government in recent times has made several attempt to curb this dreaded diseases which have eaten deep into the economy and frustrating the country's economic development, but the resistance from the corrupt leaders keep truncating the effort.

- *Rate of Exchange*

The rate of exchange, amount to the currency that is exchange for other currencies. However the foreign exchange signifies rate whereby a currency is change to another. However it has become imperative for countries to pay more attention to the mechanisms to the rate of exchange.

- *Macroeconomic Indicators*

Macroeconomic indicators are instruments that indicate the present levels of the economy of a country. These instruments are published by government agencies and the private sector at a given period of time. It gives a proper dimension and shape of the economy situation.

- *Gross Domestic Products (GDP)*

The gross domestic products represent the market value of all the total goods and services produced in a country for a given period of one year. This is one of the major economic instruments that show the state of the economy of a country. However (GDP) measures the economy's total expenditure on produced goods and services newly. Asher (2012) noted that the formula for the computation of (GDP) is the addition of the five (5) components which are Consumption spending, investment spending, Government spending, Imports and Exports.

- *Unemployment*

Unemployment plays one of the functional instruments in determining the capacity of an economy. It indicates the overall state of an economy or cycles. It is of paramount importance to observed how many jobs are available for the citizens of a country] also what percentage of the work force are actively working, and how many people are being unemployed.

- *Inflation*

This is general price increase in goods and services across the entire economy. Inflation occurs when an economy is overheated and grows rapidly. The Central Bank however creates some avenue to avoid changes in the level of prices by introducing the monetary policy thereby raising

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interest rate or reducing the supply of money in an economy. Inflation as suggested can lead to uncertainty increases and other negative effects.

➢ *Research Objectives*

- To determine the regression model
- To determine the variation effect of the rate of exchange on the economy
- To know if Gross Domestic has significant effect on the rate of exchange
- To know if the rate of Unemployment has any significant effect on the rate of exchange
- To know if the rate of Inflation has any significant effect on the rate of exchange

III. METHODOLOGY

➢ *Research Design*

A secondary data was adopted for the research. The models for this study are estimated using annual data of the macroeconomic indicators from the National Bureau of Statistical Bulletin, which comprises of Rate of Inflation (IFR), Gross Domestic Product, Rate of Unemployment and Rate of Exchange (EXCH) for the years 1986-2017. The Statistical tools employed are graphs and the maximum likelihood estimator from the R- Software for the estimation of the parameters and the multiple regression equation.

IV. DATA ANALYSIS

➢ *A Chart Representing the Exchange Rate Over Time*

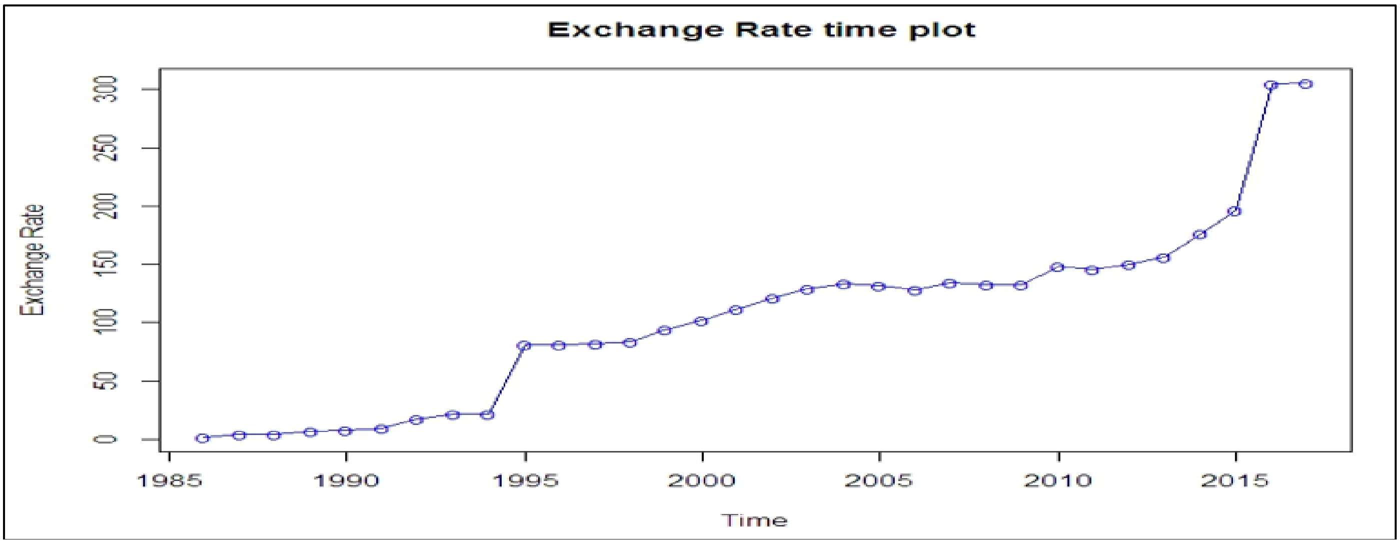

Fig 1 (A Fluctuating Trend showing the Continuous Increase and Decrease of the rate of Exchange from 1986 to 2017).

➢ *A Chart Representing the Unemployment Rate Over Time*

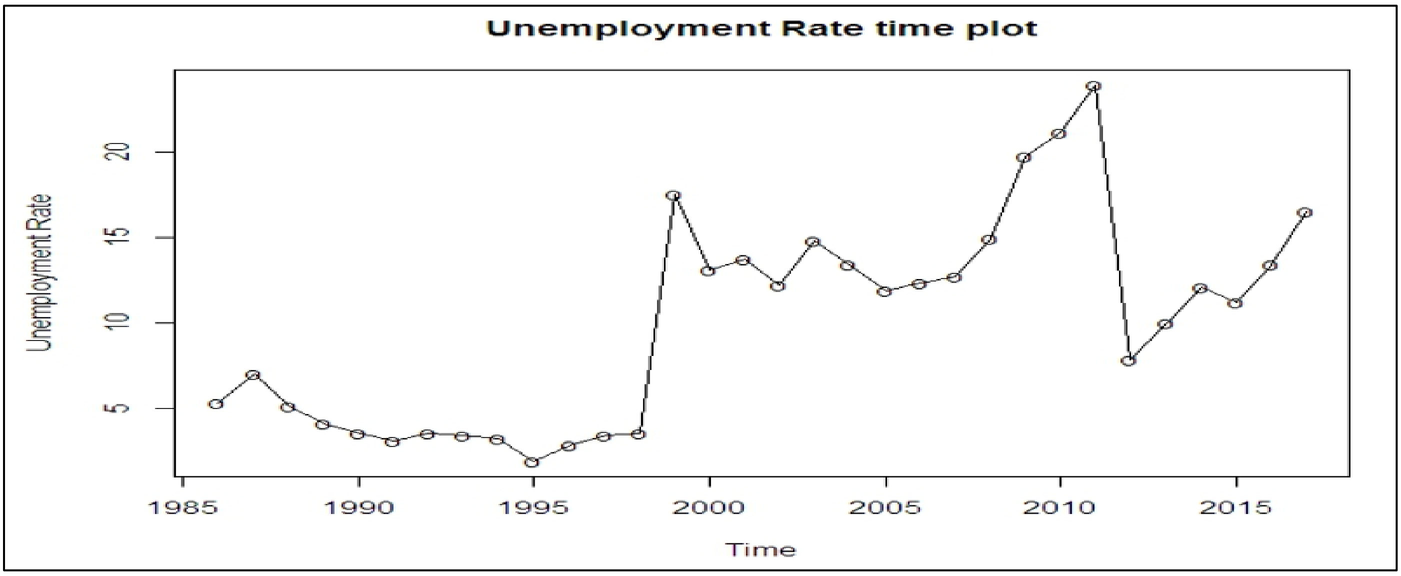

Fig 2 (A Fluctuating Trend showing the rate of Unemployment from 1986-2017).

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➢ *A Chart Representing the Inflation Rate Over Time*

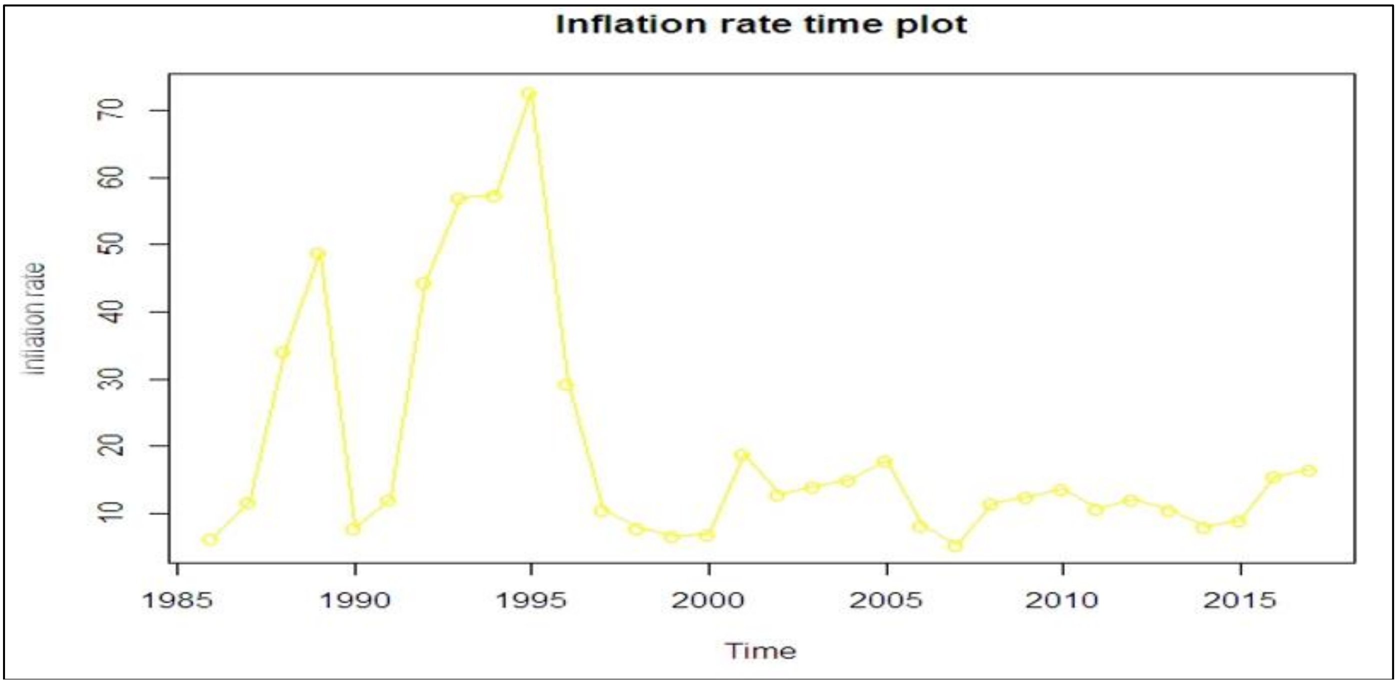

Fig 3 (A Fluctuating Trend showing the rate of Inflation from 1986-2017).

➢ *A Chart Representing the Gross Domestic Product Over Time*

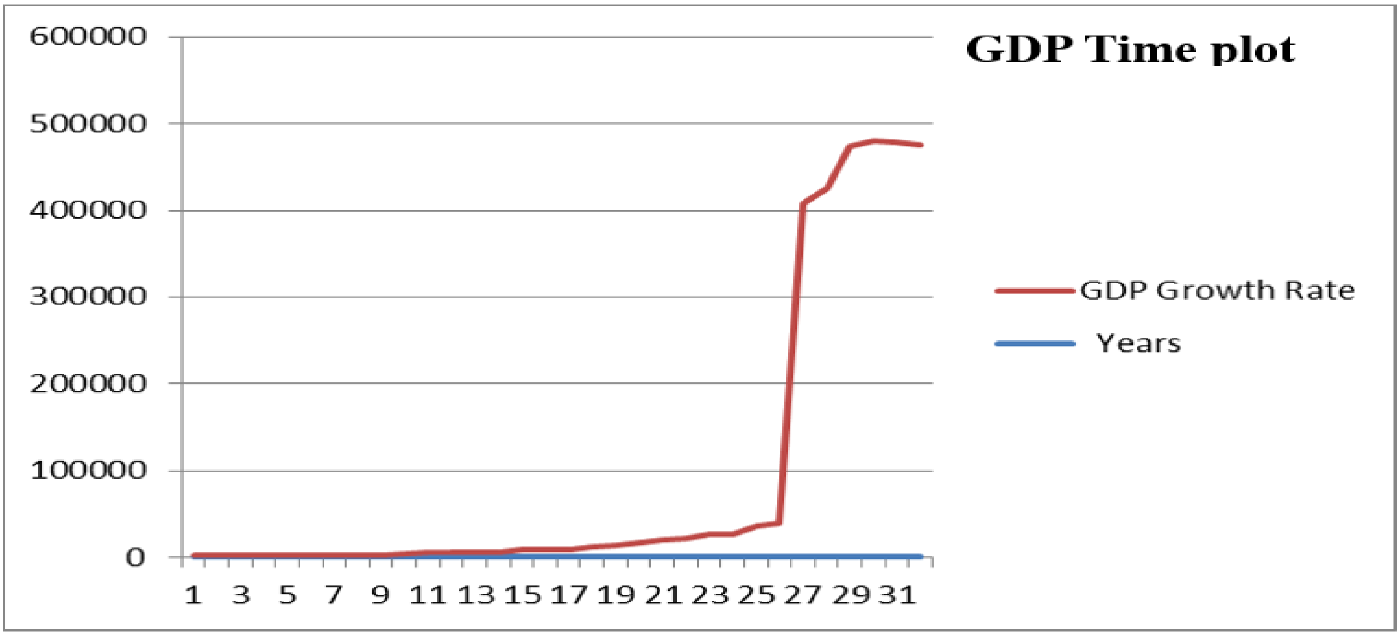

Fig 4 (A Continuous Upward Increase in the Gross Domestic Product of the Economy)

➢ *Model Specification*

- *Multiple Regression Equation*

EXCH = $\beta_0 + \beta_1$ (GDP) + β_2 (UNEMP)+ β_3(INF)

Where β_0, β_1 and β_3 are the co-efficient of the variables

EXCH= Rate of Exchange

GDP = Gross Domestic Product

UNEMP= Unemployment

INF= Inflation

From the analysis of the data the regression equation becomes

y = 2.141 – 1.646 (GDP) −0.8602 (UNEMP) + 1.311 (INF)

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➢ *Research Hypotheses*

The hypothesis to be tested for the research work is stated as follows:

- **Ho:** variation in the Nigerian rate of exchange has no significant effect on the economic progression from 1986-2017
- **Hi:** variation in the Nigerian rate of exchange has significant effect on the economic progression from 1986-2017

➢ *Regression Results*

Table 1 Regression Results

Variables	Coefficient	t-value	sig value
Constant:	2.141	3.849	0.00063
GrossDomestic Product	- 1.646	-2.409	0.02281
Unemployment	- 0.8602	-3.302	0.00263
Inflation	1.311	0.852	0.852
R^2:	0.827		
Adj. R^2:	0.813		

V. DISCUSSION AND FINDINGS

According to the regression model above, the value of the intercept (2.141) signifies that the rate of exchange will experience a 2.141 increase provided all other variables are held constant. The estimated coefficient of the Gross Domestic Product (-1.646) signifies a unit change in GDP, this will create a 0.016% decrease in rate of exchange, the estimated coefficient of the Unemployment (- 0.8602) signifies a unit change in Unemployment, this will create a 0.0086% decrease in rate of exchange, and the estimated coefficient of the Inflation (1.311) signifies a unit change in inflation, this will create a 0.013% increase in rate of exchange. From the analysis the Gross Domestic Product and rate of Unemployment have negative effect on the rate of exchange while the rate of Inflation has positive effect on the rate of exchange causing a fluctuation in the value of the rate of exchange. The possible explanation is that the rate of exchange has effect on the Nigerian economic progression for the period of 1986-2017. Furthermore as observed, the increase in the rate of inflation is a major factor affecting market changes a such creating an increase in the price of goods and services which automatically affect the level of economic output and deter the growth and development of the economy. The Coefficient of determination (R^2) implies that only 82.7% of the variation in rate of exchange is explained by the entire explanatory variable under consideration indicating a strong relationship between rate of exchange and Nigerian economic progression for the period of 1986-2017

VI. CONCLUSION

The Foreign exchange rate is one of the most important factor that measure the health and level of progression of the national economy, so it must be watched on regular basis. Hence from the study, it can be adjudged that exchange rate has effect on the Nigeria economic progrssion for the period of 1986-2017. However from the model, Nigeria as a nation can lower the rising effect of exchange rate by continuously increasing her gross domestic product and also controlling the rising effect of inflation rate.

RECOMMENDATION

In order for the Nigeria government to tackle her economic defects effectively and to achieve stability in exchange rate, the following recommendations are apt:

- The Nigerian economy should be diversified to reduce dependence on oil. The agricultural and solid minerals' sectors should be harnessed to complement inflows from the oil sector.
- Government must encourage the development of the real sector (manufacturing sector) as this is a potent way to strengthen the exchange rate.
- Development of import substitution industries particularly those concerned with production of raw materials should be encouraged.
- There should be massive public expenditure on infrastructure upgrade to boost expansion of outputs. Specifically, the privatization of the energy sector must be constantly reviewed to ensure optimal performance.
- There should be more investment in road construction, rehabilitation and maintenance as well as internal security.
- Technological transfer, technical and professional training of human resources should be given more priority.
- The introduction of price control system on goods and services inorder to curb the rising effect of inflation.
- The Central Bank must continuously monitor money supply variables to keep inflation under check and stabilize interest rate.
- Government should enable Small and Medium Scale (SMEs) to access funds and eliminate hostile conditions attached to lending to SMEs

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