

Macroeconomic Variables and Stock Performance in Nigeria: Evidence from Vector Error Correction Model

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Abstract:- This study examined the effect of macroeconomic variables on stock performance in Nigeria. Macroeconomic variables that were used are inflation rate, unemployment rate, real gross domestic product and balance of payment. Stock performance was measured by all shares index (LNASI). Unit root tests were conducted using Augmented Dickey Fuller (ADF) and Philip Perron test (PP). The result showed that all variables were integrated in the same order 1(1). Johansen co-integration test was conducted and it was observed that there are long run relationship among macroeconomic variables and stock performance. Vector Error Correction Model (VECM) result showed that inflation rate and unemployment had negative significant effect on all shares index while balance of payment and real gross domestic product had positive effect on all shares index. The study concluded that for stock exchange market to perform well, macroeconomic variables must be favorable. This implies that these variables must be stable so as to enable investors have an assurance of their investment.

Keywords:- Macroeconomic Variables; Stock Exchange Market; All Shares Index; Inflation Rate; Unemployment Rate; Real Gross Domestic Product.

JEL Classification: E44; N1

I. INTRODUCTION

Stock market is market for the buyers and sellers of stock or shares. These stocks are made up of securities listed on the stock exchange and also those that are privately traded. Price of stocks is a crucial element of the dynamics of activities in the economy and thus has the tendency to trigger social mood. Price of stocks is one of the factors to consider in the functioning of an economy. An economy is considered to be doing well when the price of stocks is at high level. Operators of stock exchange market have an objective which they have designed to accomplish and this objective should be to maximize shareholders returns. Stock exchange activities are affected mainly by macroeconomic characteristics. This is because the strength of a nation is

defined by the strength of its macroeconomic variables. This therefore implies that if an economy is performing well, all the investors would expect that stock exchange market would perform well as well and thus their wealth is maximized (Akani, 2013). If it is the other way round, the reverse would be the case.

All Share index in the Nigeria stock exchange market at present provides a broad picture of the financial strength of two hundred and thirty three listed equities. Furthermore, poor dissemination of information in the market has made transactions in the equity market to be weak (Uwubanmwem & Eghosa 2015).

The All Share of Index (ASI) has severally declined irrespective of the high value attained over the periods. The index had a very drastic decrease in 17th July, 2008, when all shares index was 52,910, and that implies 20% decrease when compared with the previous years. All Share Index (further) fell, having less than 50,000 mark on 8th August 2008 and fell further with a closing value of 42,207 as at 22nd October (at 42,207) representing a 36.4% loss (at 36.4% loss) from the high value in seven months; (this represents a year to date decline of 27.9%). The values for all shares index of Nigeria stock market in 2014, 2015, 2016 and 2017 were 34,657.2; 28,642.3; 26,874; and 38243.2 respectively (Central Bank of Nigeria statistical bulletin, 2018). This shows a 7.47% decrease when compared with 2013 index value. This implies that recently, Nigeria stock exchange market had suffered a setback.

From empirical findings, Lawal, Somoye, Babajide, and Ikechukwu-Nwanji (2018) in their study used ARDL as an estimation technique while Keynesian positive effect hypothesis was adopted. The study observed that long run relationship existed between All Shares Index (ASI) and Monetary-fiscal policies. Using Ordinary Least Square (OLS), Asekome and Agbonkhese (2015) showed that domestic product and money supply have a significant relationship with All Shares Index while exchange rate, capacity utilization and inflation do not have significant relationship.

On the effect of monetary and fiscal policy on the stock market in Nigeria, Nwaogwugwu (2018) found that there is a short and long run effect of interest rate and money supply on stock market. Furthermore, the study observed that there is a significant short and long run effect of government expenditure and taxation on the stock market in Nigeria. The studies of Bala and Hassan (2018), Ayopo, Isola and Olukayode (2015), Ditimi, Sunday and Emma-Ebere (2018) are in conformity with the study of Nwaogwugwu (2018).

The work of Sede and Omorokunwa (2015) indicated that monetary policy instruments exert more effect on stock returns in Nigeria and that the main is fiscal policy variable. Nwokoye and Emmanuel (2018) studied the monetary policy on stock market development. The work used Cointegration and vector error correction modeling (VECM) while Modern portfolio theory (MPT) was adopted. The result of the study shows that stock exchange market development is as a result of monetary policy through money supply in Nigeria. Jonathan and Oghenebrume (2017) empirically denoted that broad money supply, credit to private sector, monetary policy rate, and exchange rate are positively related to stock market prices captured by the all share index.

Furthermore, Adekunle, Alalade and Okulenu (2016) in their study shows that there is a negative linkage between interest rate and All Share Index in Nigeria. Fapetu, Adeyeye, Olufemi, Oluwagbenga and Owoye (2017) used Autoregressive Conditional Heteroscedasticity (ARCH), Generalised Autoregressive Conditional Heteroscedasticity (GARCH), Exponential Generalised Autoregressive Conditional Heteroscedasticity (EGARCH) and Threshold Autoregressive Conditional Heteroscedasticity (TARCH) to observe exchange rate volatility and stock market performance in Nigeria. They found that exchange rate has a positive relationship with market capitalization rate in Nigeria.

Further evidences from the work of Daasi, Dimoji, Collins, and Sira (2015) showed that there is a strong relationship between macroeconomic variables and stock market performance in Nigeria. To ascertain stock market response to fiscal policy in Nigeria, Onyema (2017) asserted that stock prices respond positively to fiscal policy shocks. On assessing the impact of fiscal policy operations on stock price performance in Nigeria, Ogbulu, Torbira and Umezinwa (2015) observed that a significant and positive relationship between Non-Oil Revenue and stock prices while the two-period and three-period lagged values of broad money supply have significant relationship with stock prices.

Contrary to these findings, Lawal (2016) observed that there was no existence of a long run relationship between stock returns, inflation and exchange rate. Also, Echekoba, Okaro, Ananwude and Akuesodo (2018) studied monetary policy and capital market performance and found that monetary policy instruments have no significant effect on capital market performance in Nigeria. Also Ekene (2016)

investigated the impact of monetary policy on stock returns in Nigeria and found that there is no significant effect of monetary policy variables on the prices of stock in Nigerian.

From the empirical evidences, there are inconclusive results some found that macroeconomic variables positively affect stock performance while some findings indicated that it negatively affect stock performance. Thus, based on the disparities in empirical findings, it is difficult for one to make a conclusion on how macroeconomic variables affect stock performance in developing countries especially in Nigeria that with macroeconomic instabilities and underdeveloped stock exchange market. Also, with recent World financial crisis, there is need to investigate the effect of macroeconomic variables on stock performance in Nigeria.

This study seeks to empirically investigate the effect of macroeconomic variables on stock performance in the Nigerian stock exchange market. The questions to be addressed by the study are: what is the effect of balance of payment on macroeconomic characteristics on stock exchange market in Nigeria? What is the effect of inflation rate on macroeconomic characteristics on stock exchange market in Nigeria? How does unemployment significantly affect stock exchange market in Nigeria? Finally, what is the effect of gross domestic product on stock performance in Nigeria?

II. LITERATURE REVIEW

➤ Theoretical Review

• Arbitrage Pricing Theory (APT) (1976)

Definition of the Theory: APT built up by Stephen Ross in the year of 1976. Whereas APT predicts the relationship of both returns through a combination of independent variables that are money supply, gross domestic product and industrial production and shifts in risk premiums. APT attended to cautious that more flexible assumption requirements, it is regularly to refer as derivation to capital pricing model (CAPM). CAPM is accepting the risk premium and an independent variable of the market.

APT is an alternate way to deal with determinant asset process. It is also derives its basis from the 'law of one price' demonstrating markets in two different countries, the goods and services will be priced in different currency base, but the value of the product should be the same. If the two same product sell at different prices, an arbitrage opportunity would exists. This two way different testing method for the APT are mostly alike and the explanatory factor also approaches indicates governing stock return performing relatively (Iqbal & Haider, 2005).

➤ Empirical Review

• Evidence from Cross National Studies

There are different schools of thought on the empirical evidence of the impact of macroeconomic variables on stock performance. The work of Czapkiewicz, Jamer and

Landmesser (2018) on macroeconomic indicators on the financial markets interrelations using Markov-switching copula model with time-varying matrix transition probability (TVPMS) indicated that unemployment rate and long-term interest rate are of paramount importance for interrelationships that exist between the macroeconomic variables market and the development of financial market from France Germany, or Italy. The study of Suhaibu, Simon, and Harvey (2017) supported the finding above by adding that there is a positive relationship between monetary policy and stock markets of the 12 African countries and that the effect is through interest rate. Also, the studies of Erica, Perego and Vermeulen (2013), Baroian (2014), Pradhan, Arvin, Samadhan and Taneja (2013); Krchniva (2016) asserted that economic variables significantly predict stock market performance. The findings that support positive effect of macroeconomic variables on stock exchange performance were not limited to the above studies. Barbij̄ and yondī-Jurkīb̄ (2017), in their study do fiscal variables affect stock market returns in EU countries indicated that using panel VAR model and efficient market hypothesis found that there is strong relationship between money market interest rate, inflation rate and developed EU stock market.

Igbiosa and Uhumwangho (2019) used fixed effect panel least squares regression technique on macroeconomic aggregates and stock market liquidity in African stock markets and observed that macroeconomic variables significantly explain African stock market liquidity. Iddrisu, Harvey and Amidu (2017) asserted that there is a positive effect of monetary policy (interest rate) on stock markets of the twelve African countries. Masuduzzaman (2012) added that there is both short run and long run positive effect between macroeconomic fundamentals and stock exchange performance.

Furthermore, Belke and Beckman (2014) revealed that stock markets in the developing countries respond to changes in the monetary policy instruments. In the developed economies, evidence abounds that except for Japan, no significant impact of monetary policy variables on stock market. In line with these findings, Chatziantoniou, Dugft, and Fillis (2013) and Afful and Asiedu (2013) added that monetary policy except impact stock market positively in Germany. However impact of monetary policy on US stock market was through interest rate according to the findings.

Another school of thought denoted that macroeconomic variables negatively affect stock exchange performance. For instance, Wahyudi, et al (2017) conducted a research on macroeconomic fundamental and stock price index in South East Asia Countries. They used TAR and GARCH estimation technique and observed that interest rate, inflation rate and real gross domestic product have a negative impact on the composite index in all countries except Thailand and Philippine. However, crude oil price has the positive impact in Malaysia Indonesia, and Singapore. Worlu and Omodero (2017) did a comparative analysis of macroeconomic variables and stock market

performances in Africa (2000-2015). Their work was modeled on Arbitrage Pricing Theory. The found that there is a negative impact of RGDP and inflation rate on South Africa stock while real exchange rate has impact on their stock market. Furthermore, only GDP has negative impact on Ghana stock market.

Using panel vector error correction model and quantity theory of money on monetary policy on stock return from growing stock markets, Bissoon, Seetanah, Bhattu-Babajee, Gopy-Ramdhany and Seetah (2016) observed that there is a negative relationship between interest rate and stock market return and a positive relationship between money supply and stock market return. Nguyen and Hanh (2012); Sukruoglu and Temel-Nalin (2014), Yemelyanov (2013) observed that there is a negative effect of inflation rate on stock market development.

Another school of thought is of the opinion that that macroeconomic effect has no impact on stock performance. For instance, the work of Gay (2016) who studied the impact of macroeconomic variables on stock market returns for four emerging economies: Brazil, Russia, India, and China using Box-Jenkins ARIMA model observed that there is no significant effect of exchange rate and oil price on the stock market index prices of any of the countries examined. Megaravalli and Sampagnaro (2018) also found an insignificant relationship between macroeconomic variables and stock market. Furthermore, Winful, David and Kofi (2016) investigated on macroeconomic variables and stock market performance of emerging countries and denoted that money supply has no impact on stock market.

- *Evidence from Nigeria*

Lawal, et al (2018) studied the effect of fiscal and monetary policies interaction on stock market performance in Nigeria. The study used ARDL as an estimation technique while Keynesian positive effect hypothesis was adopted. The study observed that long run relationship existed between All Shares Index (ASI) and monetary-fiscal policies. Using Ordinary Least Square (OLS), Asekome and Agbonkhese (2015) investigated the macroeconomic variables, stock market bubble, meltdown and recovery in Nigeria. The study adopted Ordinary Least Square (OLS) and the result shows that domestic product and money supply have a significant relationship with All Shares Index while exchange rate, capacity utilization and inflation do not have significant relationship.

The work of Sede and Omorokunwa (2015) on the impact of fiscal and monetary policy on stock market returns in Nigeria indicated that monetary policy instruments exert more effects on stock returns in Nigeria and that the main is fiscal policy variable. Nwokoye and Emmanuel (2018) studied the monetary policy on stock market development. The work used Cointegration and vector error correction modeling (VECM) while Modern portfolio theory (MPT) was adopted. The result of the study denoted that monetary policy, through the growth rate of money supply has impacted positively and significantly on the development of the stock market in Nigeria. Using Dynamic and Fully

Modified Ordinary Least Squares, Jonathan and Oghenebrume (2017) empirically studied the impact of monetary policy on stock market prices in Nigeria. The study showed that monetary policy rate, credit to private sector, exchange rate and broad money supply are positively related to stock market prices captured by the all share index.

Furthermore, Adekunle, et al (2016) in their study showed that there is a negative linkage between interest rate and All Share Index in Nigeria. Fapetu, Adeyeye, Olufemi, Oluwagbenga and Owoye (2017) used Autoregressive Conditional Heteroscedasticity (ARCH), Generalised Autoregressive Conditional Heteroscedasticity (GARCH), Exponential Generalised Autoregressive Conditional Heteroscedasticity (EGARCH) and Threshold Autoregressive Conditional Heteroscedasticity (TARCH)] to observe exchange rate volatility and stock market performance in Nigeria. They found that exchange rate has a positive relationship with market capitalization rate in Nigeria.

Further evidences from the work of Daasi, Dimoji, Collins, and Sira (2015) showed that there is a strong relationship between macroeconomic variables and stock market performance in Nigeria. To ascertain stock market response to fiscal policy in Nigeria, Onyema (2017) asserted that stock prices respond positively to fiscal policy shocks. On assessing the impact of fiscal policy operations on stock price performance in Nigeria, Ogbulu, Torbira and Umezina (2015) observed that a significant and positive relationship between Non-Oil Revenue and stock prices while the two-period and three-period lagged values of broad money supply have significant relationship with stock prices.

Contrary to these findings, Lawal (2016) who studied inflation and stock market returns in Nigeria using Vector Error Correction Model (VECM) observed that there is no existence of a long run relationship between stock returns, inflation and exchange rate. Also, Echekeba, et al (2018) studied monetary policy and capital market performance and found that monetary policy tools have no significant effect on capital market performance in Nigeria. Also is the work of Ekene (2016) who investigated the impact of monetary policy on stock returns in Nigeria and found that monetary policy variables did not have a significant impact on the prices of stock in Nigerian.

III. METHODOLOGY

➤ *Sources of Data*

The data to be used in this study is basically categorized into two; the dependent variable and independent variable. The dependent variable is stock exchange and this will be measured by All Shares Index and it will be derived from Central Bank of Nigeria Statistical Bulletin 2018. The independent variable is the macroeconomic variables and this will be measured using the following: Balance of payment, real gross domestic product, inflation rate and unemployment rate. These

variables will be sourced from two sources; Central Bank of Nigeria Statistical Bulletin 2018 and World Bank Economic Indicators. The variables balance of payment, all shares index and real gross domestic product will be sourced from Central Bank of Nigeria Statistical Bulletin 2018 while inflation rate and unemployment rate will be sourced from World Bank Economic Indicators.

➤ *Model of the Study*

The model to be used in this research work is grounded upon the Arbitrary Pricing theory which is being extensively used to determine the effect of macroeconomic characteristics on stock performance in Nigeria analyze the determinants of stock exchange growth in developing countries today and was adapted from the work, “Stock Market Response To Fiscal Policy In Nigeria: Empirical Evidence’ published by Onyema (2017). The variables to be found below are among the enumerated elements to be considered with the application of the theory. The variables to be used are

- i. All shares index (ASI)
- ii. Balance of Payment (BP)
- iii. Inflation rate (INF)
- iv. Unemployment rate (UP)
- v. Real gross domestic product (RGDP)

The rationale for the variables is as a result of the fact they capture the main macroeconomic variables. Knowing quite well that the variables are linearly related as asserted by Arbitrary Pricing theory, the linear functional form of the model would be:

$$ASI = f(BP, INF, UP, RGDP).....1$$

The econometrics form of the model:

$$ASI_t = \beta_0 + \beta_1BP_t + \beta_2INF_t + \beta_3UP_t + \beta_4RGDP_t + \epsilon_t... (2)$$

The log form of the model is written thus:

$$\ln ASI_t = \beta_0 + \beta_1 \ln BP_t + \beta_2 \ln INF_t + \beta_4 \ln UP_t + \beta_4 \ln RGDP_t + \epsilon_t... (3)$$

The objective of the study will extend to capture both long and short run impact of macroeconomic variables on stock performance in Nigeria. Therefore, the model will be transformed to incorporate both short and long run intercepts and slopes

$$\begin{aligned} \Delta \ln ASI_t &= a_0 + \alpha_{1t} \\ &+ \sum_{i=1}^p \alpha_{2i} \Delta \ln ASI_{t-1} + \sum_{i=1}^p \alpha_{3i} \Delta \ln BP_{t-1} \\ &+ \sum_{i=1}^p \alpha_{4i} \Delta \ln INF_{t-1} + \sum_{i=1}^p \alpha_{5i} \Delta \ln UP_{t-1} + \\ &\sum_{i=1}^p \alpha_{6i} \Delta \ln RGDP_{t-1} + \\ &\sum_{i=1}^p \beta_1 \Delta \ln ASI_{t-1} + \sum_{i=1}^p \beta_2 \Delta \ln BP_{t-1} + \\ &\sum_{i=1}^p \beta_3 \Delta \ln INF_{t-1} + \sum_{i=1}^p \beta_4 \Delta \ln UP_{t-1} + \\ &\sum_{i=1}^p \beta_5 \Delta \ln RGDP_{t-1} + \\ &u_t.....4 \end{aligned}$$

➤ Analysis

Table 1: Descriptive Statistics

	ASI	BOP	INF	RGDP	UP
Mean	16298.34	2319.532	19.55176	35990.77	11.65294
Median	11550.40	-19.48180	12.15626	27112.63	12.45000
Maximum	57990.20	278721.5	72.83550	69810.02	27.40000
Minimum	127.3000	-99332.80	5.382224	14953.91	1.800000
Std. Dev.	15238.20	52316.36	18.14077	19480.02	7.838879
Skewness	0.683410	4.287656	1.653291	0.600741	0.420445
Kurtosis	2.707202	24.78598	4.362996	1.803650	1.986036
Jarque-Bera	2.768065	776.5672	18.12093	4.072655	2.458226
Probability	0.250566	0.000000	0.000116	0.130507	0.292552
Sum	554143.4	78864.07	664.7599	1223686.	396.2000
Sum Sq. Dev.	7.66E+09	9.03E+10	10859.89	1.25E+10	2027.785
Observations	34	34	34	34	34

Source: Author’s computation using E-Views 9 (2020)

Table 2: Tabular Representation of the Augmented Dickey Fuller Test Result

ADF							
AT LEVELS				AT FIRST DIFFERENCE			
Intercept		Trend and Intercept	None	Intercept		Trend and Intercept	None
Variables	Probability	Probability	Probability	Variables	Probability	Probability	Probability
LNBOP	0.0001	0.0003	0.4485	LNBOP	0.0000	0.0000	0.0000
INF	0.2359	0.1879	0.4197	INF	0.0262	0.0181	0.0004
LNASI	0.0925	0.9526	0.9955	LNASI	0.0027	0.0006	0.0008
LNRGDP	0.8883	0.6532	0.9942	LNRGDP	0.0045	0.0175	0.0087
UP	0.8338	0.1145	0.7981	UP	0.0008	0.0047	0.0000

Source: Author’s computation using E-Views 9 (2020)

Table 3: Tabular Representation of the Philip Perron Test

Philip Perron							
AT LEVELS				AT FIRST DIFFERENCE			
Intercept		Trend and Intercept	None	Intercept		Trend and Intercept	None
Variables	Probability	Probability	Probability	Variables	Probability	Probability	Probability
LNBOP	0.0001	0.0003	0.6134	LNBOP	0.0001	0.0000	0.0000
INF	0.0878	0.1820	0.1259	INF	0.0000	0.0001	0.0000
LNASI	0.0589	0.9760	0.9857	LNASI	0.0025	0.0001	0.0011
LNRGDP	0.9562	0.7045	1.0000	LNRGDP	0.0420	0.0165	0.0114
UP	0.8114	0.3155	0.8038	UP	0.0011	0.0066	0.0001

Source: Author’s computation using E-Views 9 (2020)

Table 4: Order of Integration

Variables	ADF with Intercept	ADF with trend and intercept	ADF at NONE	PHILIP-PERRON Intercept	PHILIP-PERRON Trend and Intercept	PHILIP-PERRON At NONE
LNBOP	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
INF	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
LNASI	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
LNRGDP	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
UP	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)

Source: Author’s computation using E-Views 9 (2020)

Table 5: Tabular Representation of the Johansen Co-integration test Based on Trace Statistic

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob**
None *	0.844091	144.0974	69.81889	0.0000
At most 1 *	0.665195	86.48440	47.85613	0.0000
At most 2 *	0.587137	52.56403	29.79707	0.0000
At most 3 *	0.390963	25.14020	15.49471	0.0013
At most 4 *	0.270282	9.768019	3.841466	0.0018

Source: Author’s computation using E-Views 9 (2020)

Table 6: Tabular Representation of the Johansen result based on Maximum Eigenvalue

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob**
None *	0.844091	57.61299	33.87687	0.0000
At most 1 *	0.665195	33.92038	27.58434	0.0067
At most 2 *	0.587137	27.42382	21.13162	0.0057
At most 3 *	0.390963	15.37218	14.26460	0.0333
At most 4 *	0.270282	9.768019	3.841466	0.0018

Source: Authors Computation using E- Views 9 (2020)

The two results above show that there are one co-integration equations based on trace Statistic and also based on MaxEigenvalue statistics and thus, there is long run relationship among the variables.

Table 7: Tabular Representation of Vector Correction Model Result for Short Run Dynamics

Error Correction	D(LNASI)	D(INF)	D(LNBOP)	D(LNRGDP)	D(UP)
CointEq1	-0.023678	-3.218261	-0.103015	0.001675	0.252508
	(0.01506)	(0.44389)	(0.09900)	(0.00135)	(0.16241)
	[-3.57274]	[-7.25018]	[-1.04051]	[1.24480]	[1.55478]

Source: Authors Computation using E- Views 9 (2020)

Table 8: Tabular Representation of Vector Correction Model for Long Run Parameters

Variables	Coefficients	Standard Error	T-Statistics
LNAGDP	1.000		
INF	-0.234098	0.04508	-5.25944
LNBOP	3.333525	0.42220	7.89559
LNRGDP	5.585651	2.29050	2.43862
UP	-0.447905	0.17250	-2.59653
C	103.5372		
R ²	0.753138		
Adjusted R ²	0.719089		
F-statistic	22.11869		
Prob(F-statistic)	0.000000		

Source: Authors Computation Using E-Views 9(2020)

Regression Equation: $LNASI = 103.53 - 0.23INF + 3.333LNBOP + 5.585LNRGDP - 0.445UP$

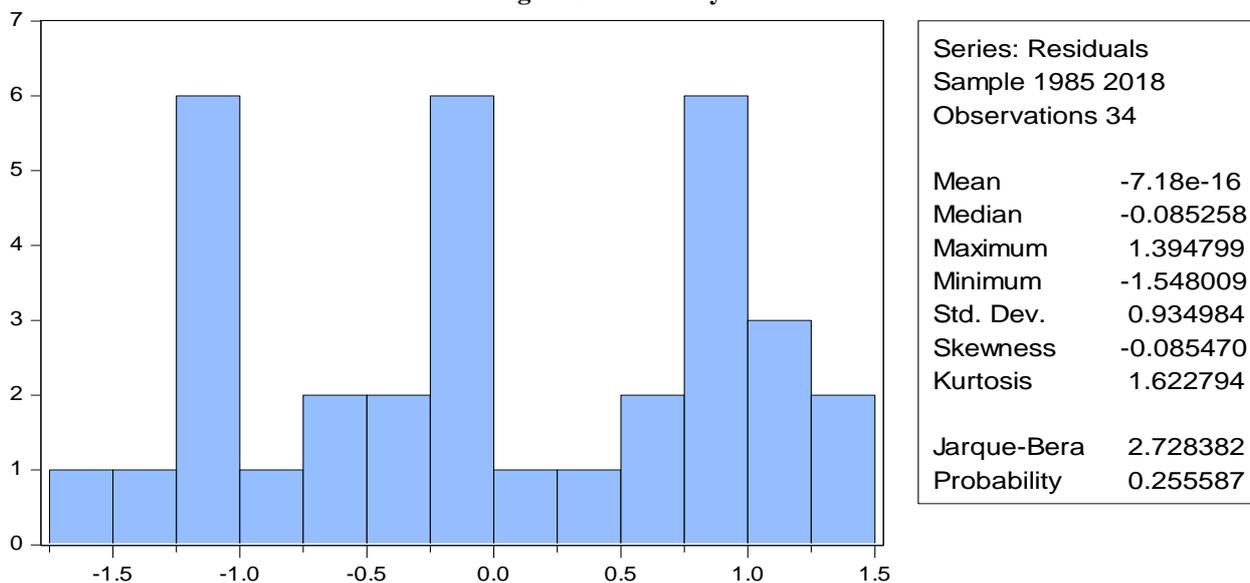
Table 10: Test of Hypotheses

Variables	T-statistics	T-tabulated	Decision Rule
INF	-5.25944	2.04	Significant
LNBOP	7.89559	2.04	Significant
LNRGDP	2.43862	2.04	Significant
UP	-2.59653	2.04	Significant

Source: Author’s computation using E-Views 9 (2020)

➤ *Post Estimated Test*

Figure 6: Normality Test



Source: Author’s computation using E-Views 9 (2020)

Table 11: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.934306	Prob. F(4,29)	0.0114
Obs*R-squared	11.96019	Prob. Chi-Square(4)	0.0176
Scaled explained SS	2.709509	Prob. Chi-Square(4)	0.6076

Source: Author’s computation using E-Views 9 (2020)

Table 12: Serial Correlation Test

Lags	LM-Stat	Prob
1	23.51581	0.5475
2	20.33409	0.7291

Source: Author’s computation using E-Views 9 (2020)

IV. DISCUSSION OF FINDINGS

The study investigated the effect of macroeconomics variables on stock performance in Nigeria. It was observed from the study that real gross domestic product and balance of payment have positive significant effect on all shares index while inflation rate and unemployment rate has negative effect on all shares index in Nigeria. Co-integration result showed that there is a strong long run relationship between macroeconomic variables and stock performance in Nigeria. This result is in agreement with the finding of Daasi, et al (2015) who observed that stock market performance is determined by stability in macroeconomic variables in Nigeria. In India, Mohi-u-Din Sangmi and Hassan (2013) observed from their study that significant relationship exists between macroeconomics variables and stock price in India. Evidence from Kenya, Ouma and Muriu (2014) observed that there exists a significant relation between stock market returns and macroeconomic variables in Kenya. Mugambi and Okech (2016) studied effect of macroeconomic variables on stock returns of listed commercial banks in Kenya using Ordinary Least Square (OLS) technique and indicated that exchange rate, interest rate, and inflation have significant influence on bank stock return, while GDP had an insignificant effect. Ntshangase, Mingiri and Palesa (2016) indicated that there exists a long-term relationship between the selected macroeconomic variables and the stock market in South Africa. Masuduzzaman (2014) observed a very weak long run relationship between macroeconomic variables and stock performance in Bangladesh. Contrary to these findings, Lawal (2016) who studied inflation and stock market returns in Nigeria using Vector Error Correction Model (VECM) observed that there is no co-integration between inflation, exchange rate and stock returns.

The value of Adjusted R2 which is 0.719089 implies that 71.9% variations in stock performance are accounted by macroeconomic variables. This shows the extent at which macroeconomic variables predict stock market behavior. This is in accordance with Arbitrarily Trade that requires that returns on any stock should be linearly related to a set of macroeconomic variables.

V. CONCLUSION AND RECOMMENDATIONS

Macroeconomic variables are keys to the survival of a nation. When there are fluctuations in macroeconomic variables of any economy, such economy will be in jeopardy. Nigeria is not left behind when we talk of economics whitt fluctuations in her macroeconomic variables. This makes it very difficult for investors to patronize and invest in Nigeria. Investors cannot predict the likelihood of their investment due to the fact that macroeconomic variables are characterized with fluctuations. It is a known fact that when an economy is performing well, all the investors would expect that stock exchange market would perform well as well and thus their wealth is maximized. This study has demonstrated that for stock exchange market to perform well, macroeconomic variables must be favorable. This implies that these

variables must be stable so as to enable investors have an assurance of their investment. Based on the findings, the following recommendations are made:

1. Government should ensure an increase in her gross domestic product. They would achieve this by ensuring that business environment is favorable, there is constant electric supply, good roads etc. All these would lead to an increase in productivity thereby increasing gross domestic product.
2. Employment opportunities should be created. The more people are working, the more an increase income which will lead to an increase in investment.

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