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INTERACTION BETWEEN EXCHANGE RATE AND STOCK PRICES IN NIGERIA

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The study investigated the interaction between exchange rate and stock prices movement in Nigeria for the period of 1986 to 2017. Exchange rate, gross domestic product, inflation and interest rate were used to determine the interaction between exchange rate and stock prices movement proxied as all share index in Nigeria. The study employed unit root test was used to test the stationarity of the variables, the Auto Regressive Distribution Lag (ARDL) test to test for the presence of long run relationship among the variables, Error Correction model to show the rate at which short-run inconsistencies are being corrected and incorporated into the long-run equilibrium relationship. The result of the study found that the exchange rate has a negative and significant relationship with all share price; gross domestic product has negative and significant interaction with all share index; inflation rate revealed a negative and insignificant interrelationship with all share index; interest rate displayed positive and statistically insignificant nexus with all share price in Nigeria; a uni-directional causality flowed from ASI to INT. It was concluded that the exchange rate has a weak interrelationship with stock prices movement under study review in Nigeria. The study recommended that a conducive business environment should be stimulated by the government in order to enhance the real sector and boost the economy through an increase in savings and investment.

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INTRODUCTION

Stock returns follow a random pattern rather than a systematic pattern in an efficient market. This is the position of the Efficient Market Hypothesis (EMH) by Malkiel and Fama (1970). The EMH argues that in an efficient market where new information is regularly and quickly reflected in the stock returns before such information is released, then it is extremely difficult to outsmart the market to realize abnormal gains (Nwaolisa & Kasie, 2012). Fundamental and technical proponents think otherwise. The former strongly believe that fundamentals such as earnings, dividends, future cash flows, as well as external factors such as the level of economic activity dictate the behavior of stock returns (Adeniji, 2015). The latter who is also known as the chartist meanwhile posits that past returns have a strong correlation with current stock returns. From the foregoing, there is no clear consensus as to the factors that predict stock returns. However, investors are basically interested in making capital gains or dividends, so therefore they combine and study all available factors and information in order to predict the direction of stock returns. The emergence of the behavioural finance supporters also deviates from the classical theory position as to the factors that affect stock returns and therefore suggest that psychological factors such as sentiments of investors or noise traders should be considered in stock returns valuations (Haritha & Rashmi, 2016). The activities of investors in the financial market, however have strong implications on the economy as a whole.

Stock market performs a tremendous task in economic development via the promotion of capital formation and enhancing economic growth (Mehr-un-Nisa & Nishat, 2012). In the same vein, exchange rate according to Jongbo (2014) mirrors the worth of an economy relative to another economy. Therefore, a relative price as it influences the international competitiveness of domestic goods. In theory, a depreciating exchange rate improves the external competitiveness of local goods as it signals cheaper prices thereby promoting export as import becomes expensive. An appreciating currency meanwhile jeopardizes the external competiveness of domestic goods as import becomes cheaper. Consequently, exchange rate stability and stock market growth become the dual economic objectives that every growth-driven country strives to accomplish. Since the financial position of every economy whether developed or developing can be assessed from its exchange rate stability (Bala & Hassan, 2018) vis-à-vis stock market performance.

The Bretton Woods Agreement of 1973 witnessed most countries converged to adopt a free floating or flexible exchange rate regime thereby abandoning the fixed or adjustable pegged system (Aydemir & Demirhan, 2009), which the IMF views as giving undue advantages to countries. In a flexible exchange rate system, foreign exchange rates are determined by market forces rather than being fixed by monetary authorities which may fail to reflect through the picture of economic activity. The supporters of free floating system theorize that a perfect market will allocate resources efficiently and regulate

nominal exchange rate if the market is free from governments or monetary authorities' intervention and distortions (Kutty, 2010).

As stock prices and foreign exchange rates act as barometers of the financial system and the state of the economy (Akdogu & Birkan, 2016). If the causal relationship between this two above mentioned variables can be established and the sequence of financial market phenomena behind instability can be recognized, it could help policy makers to avoid large scale financial instability and enhance the contribution of the financial markets to sustainable growth and development. Hence, this study will attempt to investigate the causal relationship between exchange rates and stock prices in Nigeria.

There is extant literature on the relationship between stock prices and exchange rates in both developed and emerging economies but the results have been diverse and inconclusive as regards which of the models is most applicable to, or predominant within an economy (Richard *et al* 2009). Some group of studies (Adaramola, 2012; Akdogu & Birkan, 2016; Bala & Hassan, 2018) establishes that it is the exchange rate that causes the movements in stock prices, thereby supporting the flow oriented model. On the other hand, studies by Aydemir and Demirhan (2009), Richards, Simpson and Evans (2009), Kutty (2010), Umer, Sevil and Kamisli (2015), and Huy (2016) provide empirical evidence that causation runs from the stock price to exchange rate which implies the support of the stock oriented model. While another group of studies (Aliyu, 2009; Umoru & Asekome, 2013; Abimbola & Olusegun, 2017; Ounma & Kihui, 2018) indicates that a

bidirectional causal relationship exists between the two variables. Meaning that both variables (the exchange rate and stock price) cause each other. Interestingly, some other studies (Rahman & Uddin, 2009; Zubair, 2013) show that no causal relationship exists between the two variables, thereby providing empirical support for the monetary model. The diverse results from previous studies necessitate further empirical investigation.

LITERATURE REVIEW

2.1   Conceptual Review
2.1.1   Exchange rate

Exchange rate is the price one country's currency to that of another country, this implies that exchange rate has two components, i.e. the domestic and foreign component and hence indicating that it can be expressed directly or indirectly (Akong's, 2014). Direct expression of exchange rate is where the exchange rate is expressed based on domestic currency. On the other hand, indirect expression is where the rate of exchange is expressed in foreign currency terminologies. In direct expression, local currency is termed as counter currency, while the foreign currency, and becomes base currency. The exchange rate provides a key link between a country and the rest of the world, both in goods and assets markets. It affects the volume of both imports and exports (by changing their relative prices), as well as the stock of foreign debt in domestic currency terms (Rao & Tolcha, 2016). In fact, all transactions with the rest of the world can be potentially affected by the level of the exchange rate. A depreciation of exchange rate is often associated with competitiveness gains, in

a sense, the relative price of export will fall and imports become relatively more expensive. However, currency depreciation usually worsens the country's debt position and increase interest payments (Martins, 2009). Poor exchange rate policy risks misrepresenting trade opportunities resulting in misallocation of resources. A competitive and stable real exchange rate (RER) should be the optimal policy target.

2.1.2   Exchange Rate Regimes

There are commonly two exchange rate regimes, we have the floating exchange (flexible) and the fixed (pegged) exchange rate regime. However, each regime has its advantages and disadvantages. According to Jacob (2015), the choice of an exchange rate regime should depend on the peculiarities of the economy as well as the prevailing economic situation.

2.1.2.1 Fixed or Pegged Exchange Rates

The fixed exchange rate is a phenomenon which occurs when the rate of a currency against other currencies is fixed. It entails the pegging of the exchange rate of the domestic currency to either unit of gold, a reference currency or a basket of currencies with the primary objective of ensuring a low rate of inflation. The advantages and disadvantages of the fixed regime include amongst others, the reduction of transaction cost in trade, increased macroeconomic discipline, the possibility of increased credibility due to stability in the exchange rate and increased response to domestic nominal shocks. A major drawback of the fixed/pegged regimes, however, is that it implies the loss of monetary policy discretion (or monetary policy independence).

2.1.2.2 Flexible or Fluctuating Exchange Rates

This regime implies that the forces of demand and supply will determine the exchange rate Jacob, 2015). The regime assumes the absence of any visible hand in the foreign exchange market and that the exchange rate adjusts automatically to clear any deficit or surplus in the market. Consequently, changes in the demand and supply of foreign exchange can alter exchange rates but not the country's international reserves. Thus, the exchange rate serves as a "buffer" for external shocks, hence allowing the monetary authorities full discretion in the conduct of monetary policy. That is, monetary policy independence, defined in terms of a country's ability to control its monetary aggregates and influence its domestic interest rate and inflation (Ngene, 2010). This is the greatest advantage of the floating regime. The disadvantages of the freely floating regime include persistent exchange rate fluctuations, high inflation and transaction cost.

2.2   Theoretical Foundation

Both the flow oriented and the stock oriented models will serve as the theoretical foundation for this study. This is because the flow oriented and stock oriented model theoretically establish the relationship between exchange rate and stock prices. The flow oriented model posits that exchange rate causes the movements in stock prices. However, the stock oriented argues that stock prices are the leading determinants of exchange rates (Pilbeam, 1992). Hence, it is in the purview of this study to work in line with the

two theories in order to establish support or rejection for any of the theoretical models in the Nigerian economic context.

2.3   Empirical Review

Fratzscher, Schneider and Van Robays (2014) analyze the relationship between oil prices, the US dollar, and asset prices in a financial market perspective. The empirical study revealed that the US dollar and oil prices were significantly influenced by changes in the equity market returns and risk. The result also showed a bidirectional causality between the US dollar and oil prices since the early 200s. According to the study, the result was down to the increased use of oil as a financial asset over the past decade, which intensified the link between oil and other assets. Moore and Wang (2014) assess the sources of the dynamic association between real exchange rates and stock prices in relation to the US market for the developed and emerging Asian markets. The empirical results showed that trade balance is the main determinant of the dynamic relationship between exchange rate and stock prices for the Asian markets, while interest rate differential is the driving force for the development markets.

Okwuchukwu (2015) investigates the linkage between exchange rate volatility, stock market and foreign direct investment in Nigeria from 1980 to 2013 using the ordinary least square and error correction mechanism. The empirical investigation revealed that exchange rate volatility has a negative and significant effect on the inflow of foreign direct investment both in the long run and short run in Nigeria. Nkoro and Uko (2016) attempt an investigation into the

relationship between exchange rate, inflation volatility and stock prices volatility in Nigeria using the GARCH (1,1) models. The empirical findings showed evidence of a negative relationship between stock market pries volatility, exchange rate and inflation volatility in Nigeria.

Abimbola and Olusegun (2017) appraise the relationship between exchange rate volatility, stock market performance and aggregate output in Nigeria using ARCH and GARCH model based on quarterly time series data for the period 1986 to 2015. The findings showed that exchange rate and stock price are volatile. Also, there is a strong positive relationship between exchange rate, stock price movement and aggregate output. In addition, Exchange rate volatility was found to granger cause stock price movement and aggregate output and vice versa. Furthermore, exchange rate volatility and stock market performance jointly have a positive and significant impact on aggregate output. Finally, a joint causal impact of volatility of exchange rate, stock price, and reserve on aggregate output exist in Nigeria. The study arrives at the conclusion that there is a strong causal relationship between exchange rate volatility, stock market price and economic growth in Nigeria. Okoro (2017) examines the impact of macroeconomic factors on stock market performance from 1986 to 2015 in Nigeria using the Ordinary Least Square (OLS). The study selected the following variables; gross domestic product, money supply, interest rate, inflation rate, and exchange rate. The study found out that the selected macroeconomic variables are insignificant in explaining the behavior of the stock market. The study concludes that the

movement in stock prices cannot be explained by macroeconomic factors.

Sulieman and Abba (2017) estimate the relationship between exchange rate volatility and stock market prices in Nigeria over the period 1985 to 2014, using the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) technique, Johansen Co-integration, and Error Correction Mechanism. The empirical result revealed that exchange rate and inflation rate contribute significantly to the sources of volatility in stock prices in both the short run and long run. In addition, it was also revealed that a long run equilibrating relationship exists among the variables. Daggash and Abraham (2017) analyze the effect of exchange rate returns on equity prices in South Africa and Nigeria and also checked for the presence of volatility in the Naira and the Rand using the Vector Autoregressive (VAR) model. The study finds the existence of volatility in the returns of the Rand, while such does not exist in the Naira return. On the effect of exchange rate returns and crude oil price on the stock market indices of both countries, it was also found that exchange rate return has a positive impact on the performance of the Nigerian stock exchange thus, confirming the stock flow hypothesis for Nigeria and refuting same for South Africa. Although the VAR granger causality identifies short run fluctuation of the naira as a significant factor affecting the performance of the Nigerian stock exchange in the short run, the Johannesburg stock exchange was found to be mostly affected by short run changes in the Rand and the UK FTSE 100.

Ounma and Kihiu (2018) consider five foreign currencies (United States' dollar, the British pound, European euro, Japanese yen, and Chinese Yuan) to investigate the relationship between exchange rate fluctuations and stock market performance in Nairobi Securities Exchange using monthly data for the period between January 2010 and July 2015. The Johansen co-integration, VECM framework, and Granger causality were employed to carry out the empirical analysis. The empirical results revealed the existence of a significant relationship between exchange rates and stock market index both in the short run and long run.

Bala and Hassan (2018) examine the relationship between exchange rate and stock market in Nigeria using annual data from 1985 to 2015. The Autoregressive Distributed Lag (ARDL) model and Granger Causality model were employed for the empirical analysis. The result showed that exchange rate has a positive and significant effect on stock prices, while there is also a unidirectional causal relationship running from exchange rate to stock prices. The result also shows evidence of causality running from stock prices to money supply and provide evidence of no causality between economic growth and stock prices. Udoka, Nya, and Bassey (2018) investigate the effect of macroeconomic determinants of stock movements in Nigeria using the autoregressive distributive lag (ARDL) for the period 1986 to 2014. The empirical findings from the study indicate that macroeconomic variables such as gross domestic product, exchange rate, interest rate, and inflation rate have no long run relationship with stock prices. The study thus, concludes that

no long run association exists between macroeconomic variables and stock price movements in Nigeria.

RESEARCH METHOD
3.1 Research Method and Model Specification
The research design that will be employed in this study is the expo-facto research design as the study will make use of secondary data. This study will adopt an econometric methodology in the

analysis of the effect of exchange rate on stock prices including some control variables, with special inclination to the Nigeria stock market. The research model was based on the study of Bala and Hassan (2018). The model of Bala and Hassan (2018) specify all share index as a function of exchange rate, gross domestic product, and money supply. The model is stated as:

$$ASI = \beta_0 + \beta_1 EXCH + \beta_2 GDP + \beta_3 M2 + \mu \quad (3.1)$$

The equation 3.1 is modified and includes inflation rate and interest rate with the exclusion of money supply. Money supply is excluded because of its high correlation with gross domestic supply which could cause multicollinearity problem. Hence, the variables selected are stock market proxies by All Share Index (ASI), Exchange Rate (EXR), economic growth proxies by Gross Domestic Product (GDP), inflation rate (INFR) and interest rate (INT). The functional form of the model is given below;

$$ASI = \beta_0 + \beta_1 EXR + \beta_2 GDP + \beta_3 INFR + \beta_4 INT + \mu \quad (3.2)$$

Where; ASI = Stock market index, EXR = Nominal Exchange rate, GDP = Gross domestic product, INFR = Inflation rate, INT = Interest rate, μ = Error term, β_0= Intercept or constant term, $\beta_1 - \beta_4$= Coefficients of regressors

The ARDL model is given as

$$\Delta LASI_t = \beta_0 + \sum_{i=0}^{n}\beta_1 \Delta L\,ASI_{t-1} + \sum_{i=0}^{n}\beta_2 \Delta L\,EXR_{t-1} + \sum_{i=0}^{n}\beta_3 \Delta L\,GDP_{t-1} + \sum_{i=0}^{n}\beta_4 \Delta L\,INFR_{t-1} + \sum_{i=0}^{n}\beta_5 \Delta L\,INT_{t-1}$$
$$+ \alpha_1 LASI_{t-1} + \alpha_2 LEXR_{t-1} + \alpha_3 LGDP_{t-1} + \alpha_4 LINFR_{t-1} + \alpha_5 LINT_{t-1}$$
$$+ \mu_t \qquad (3.3)$$

Note that $\beta_0, to\ \beta_5$ and α_1 to α_5 are the parameters of the explanatory variables while Δ denotes the first difference operator. Similarly, ARDL model in the form of unrestricted error correction model (ECM) for stock-oriented and flow-oriented models (i.e. stock price and exchange rates as the dependent variables) can be expressed as follows:

$$\Delta LASI_t = \beta_0 + \sum_{i=0}^{n}\beta_1 \Delta L\,ASI_{t-1} + \sum_{i=0}^{n}\beta_2 \Delta L\,EXR_{t-1} + \sum_{i=0}^{n}\beta_3 \Delta L\,GDP_{t-1} + \sum_{i=0}^{n}\beta_4 \Delta L\,INFR_{t-1} + \sum_{i=0}^{n}\beta_5 \Delta L\,INT_{t-1}$$
$$+ \beta_6 ECM_{t-1} + \mu_t \qquad (3.4)$$
$$\Delta LASI_t = \beta_0 + \sum_{i=0}^{n}\beta_1 \Delta L\,ASI_{t-1} + \sum_{i=0}^{n}\beta_2 \Delta L\,EXR_{t-1} + \sum_{i=0}^{n}\beta_3 \Delta L\,GDP_{t-1} + \sum_{i=0}^{n}\beta_4 \Delta L\,INFR_{t-1} + \sum_{i=0}^{n}\beta_5 \Delta L\,INT_{t-1}$$
$$+ \beta_6 ECM_{t-1} + \mu_t \qquad (3.5)$$

3.2   Sources of Data

The study is conducted on time series annual data for a period spanning from 1986 to 2017. The choice of the period was premised upon the fact that it strictly marks the beginning of the reform era in the country, and most significantly to provide a recent empirical evidence. The data needed in carrying out this research work will be sourced from various (secondary) sources, which implies that the data will be obtained from published sources such as the Central Bank of Nigeria (CBN) statistical Bulletin 2017 issue and National Bureau of Statistics.

3.3   Description of Variables

Stock Prices (ASI): The stock price is proxied with the Nigeria stock exchange market index which is known as the All Share Index. It represents the series of numbers which shows the changing average value of the share prices of all quoted companies on the stock exchange, and which is used as a measure of how well a market can be said to be performing. In Nigeria, only common stocks (ordinary share) are included in the computation of the index.

Exchange rate (EXR): It measures the rate at which Nigerian naira exchanges with a foreign currency. An exchange rate is a rate at which one currency can be converted into another

Inflation rate (INFR): It is the persistence increase in the general prices of goods and services within an economy.

Gross domestic product (GDP): Gross domestic product is commonly used as an indicator of the economic health of a country, as well as to gauge a country's standard of living.

Interest Rate (INT): This represents the opportunity cost of holding money. High interest rate makes the cost of borrowing high and hence negatively impacting on economic activity.

RESULTS AND DISCUSSION

4.1   Unit Root Test

Table 4.1:   ADF Unit Root Test Results at Level

Variables	ADF Test Statistics	Critical Value	Order of Integration	Remarks
ASI	-3.983814	-2.963972	I(1)**	Stationary
EXR	-5.608128	-3.670170	I(1)***	Stationary
GDP	-3.062104	-2.963972	I(1)**	Stationary
INF	-4.289125	-2.960411	I(0)**	Stationary
INT	-5.005728	-2.960411	I(0)**	Stationary

Note: *(**)(***)   -   Significant at 10%(5%)(1%) percent level respectively*

Source: E-view 9 Statistical Package

Table 4.1 showed that all the variables that is; all share index (ASI), exchange rate (EXR), gross domestic product (GDP), inflation (INF) and interest rate (INT) were stationary at levels and first difference respectively and at 10%, 5% and 1% significant levels respectively. This implied that inflation and interest

rate were stationary at level and at 5% whereas all share index, gross domestic product and exchange rate were stationary at first difference at 5% and 1% respectively.

4.2 Co-integration Test

Null Hypothesis: No long-run relationships exist

Table 4.2:   Pesaran Shin (1999) Bounds test table

Test statistics	Value	Regressors(k)
F-statistics	15.27312	4
Critical Value Bounds	I(0) Bound	I(1) Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: E-view 9 Statistical Package

Table 4.2 indicated that the F-stat of 15.27312 is higher than any of the Upper Bound table value at 10%, 5% 2.5% and 1% level of significant respectively. This implied that the null hypothesis that no longrun relationship exists cannot be accepted. Hence, the existence of a long-run relationship among the variables in the model was accepted leading to the analysis of long run analysis and the short-run dynamic and error correction analysis.

4.3 Long and Short run Estimation Coefficients
Table 4.3   Long Run Co-Integrating Coefficients
Dependent variable (RGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.658039	1.075665	4.330381	0.0012
EXR	1.223502	0.087586	13.969141	0.0000
GDP	-0.645570	0.177703	-3.632869	0.0039
INF	-0.248908	0.105611	-2.356825	0.0380
INT	0.607581	1.226194	0.495502	0.6300

Source: E-view 9 Statistical Package

Evidence from Table 4.3 showed that exchange rate and interest rate significantly affect economic growth while gross domestic product and inflation rate have a negative and significant effect on economic growth in Nigeria. Hence, exchange rate and interest rate will influence economic growth by 1.223% and 0.607% increase respectively whereas gross domestic product and inflation rate will influence economic growth by -0.645 and -0.248 decrease respectively.

4.4   The Short-run Dynamic and the Error Correction Model
Table 4.4: Short-run Dynamic and ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ASI(-1))	0.093631	0.219748	0.426085	0.6783
D(ASI(-2))	-0.201527	0.130815	-1.540553	0.1517
D(EXR)	-0.506964	0.356705	-1.421242	0.1830
D(EXR(-1))	-1.388748	0.340877	-4.074039	0.0018
D(EXR(-2))	-0.261530	0.229012	-1.141994	0.2777
D(EXR(-3))	-0.776907	0.249888	-3.109026	0.0099
D(GDP)	2.648774	2.794820	0.947744	0.3636
D(GDP(-1))	-7.787274	2.941867	-2.647052	0.0227
D(GDP(-2))	-2.224387	1.542664	-1.441913	0.1772
D(INF)	-0.076856	0.058783	-1.307452	0.2177
D(INT)	-0.005196	0.661774	-0.007851	0.9939
CointEq(-1)	-1.216130	0.348840	-3.486209	0.0051

Source: E-view 9 Statistical Package

Table 4.4 explained the coefficient of the error correction term ECM(-1) which was said to have the correct sign and significant at 5% level. The value of the coefficient was -1.216130 which indicated a slow rate of adjustment. The result showed that about 12.16% of the short-run inconsistencies were being corrected and incorporated into the long-run equilibrium The short run result revealed that exchange rate has an insignificant negative relationship with all share index but after differencing (EXR(-3) became significant. Therefore, it can be concluded that the lagged of exchange rate value (EXR(-3) has the coefficient of 0.776907 implying that exchange rate decreased stock prices movement by 0.776% in the short run. The short run result further showed that the value of gross domestic product was positively related with stock prices movement but became negative after lag difference (GDP(-1), this implied that the value of lag gross domestic product negatively and significantly decreased stock prices movement by -7.787%. Interestingly the result of gross domestic product is consistent with the longrun result indicating a negative and

relationship in each period. In another word, it can be said that the level at which exchange rate adjust to equilibrium was about 12.16%. This therefore, implied that an approximate 12% of the discrepancy between long and short run level of exchange rate in Nigeria was corrected and incorporated on a yearly basis.

significant effect on stock prices movement in Nigeria. The value of inflation submitted an insignificant negative report on stock prices in Nigeria within the study period. This implied that the relationship between inflation and stock prices is negative in nature and thus decreased the output of all share index in Nigeria by -0.076%. Finally, interest rate has a negative effect on stock price movement in Nigeria. Therefore, interest rate has a negative and insignificant effect on stock prices in Nigeria. All things being equal, 1 percent change in interest rate negatively decreased stock prices in Nigeria by -0.005%.

4.5   Granger Causality Test
Pairwise Granger Causality test is employed to explore the causality between the stock market

and economic growth in Nigeria. This involves the comparison of F-statistic with probability value to determine the causality. The decision rule is that if F-statistic is greater than 2 and prob. value is less than 5% level, then there is a causal relationship between the variables against which the prob. is displayed. Otherwise, there is no causality. The causality results are shown as follows:

Pairwise Granger Causality Tests
Date: 03/07/19   Time: 23:48
Sample: 1986 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
EXR does not Granger Cause ASI	30	5.84359	0.0083	Reject
ASI does not Granger Cause EXR		2.38759	0.1125	Accept
GDP does not Granger Cause ASI	30	0.10003	0.9052	Accept
ASI does not Granger Cause GDP		0.59437	0.5595	Accept
INF does not Granger Cause ASI	30	0.09780	0.9072	Accept
ASI does not Granger Cause INF		1.76937	0.1911	Accept
INT does not Granger Cause ASI	30	1.61329	0.2193	Accept
ASI does not Granger Cause INT		5.63732	0.0095	Reject
GDP does not Granger Cause EXR	30	0.45406	0.6402	Accept
EXR does not Granger Cause GDP		2.26359	0.1249	Accept
INF does not Granger Cause EXR	30	1.79949	0.1862	Accept
EXR does not Granger Cause INF		2.24553	0.1268	Accept
INT does not Granger Cause EXR	30	0.95577	0.3981	Accept
EXR does not Granger Cause INT		3.21029	0.0574	Reject
INF does not Granger Cause GDP	30	0.39650	0.6768	Accept
GDP does not Granger Cause INF		0.73337	0.4903	Accept
INT does not Granger Cause GDP	30	2.15116	0.1374	Accept
GDP does not Granger Cause INT		3.20925	0.0575	Reject
INT does not Granger Cause INF	30	1.32796	0.2831	Accept
INF does not Granger Cause INT		2.33560	0.1175	Accept

Source: E-view 9.5 Statistical Package

Table 4.5 showed that there exists no causality between ASI and some of the explanatory variables (EXR, GDP and INF), this is because the F-statistics are less than 2, that is, 2.38759, 0.59437, and 1.76937 and/probability value is greater than 5% respectively but there exist uni-directional causality between ASI and INT, this is on the

basis that the F-statistics 5.63732 is greater than 2 and the prob. value 0.0095 is less than 0.05. This implied that the present value of ASI cannot predict the future value of any explanatory variable and vice versa except for INT. However, the test indicates that there exists uni-directional causality between EXR and INT as evident by its probability value. This is on basis that the F-statistics 3.21029 is greater than 2 with probability value 0.05 which is less than 0.05. Also, there is a uni-directional causality flowing from GDP to INT with F-statistics 3.20925 >2. Based on uni-directional causality that flows from ASI to INT, it connotes the existence of one-way causation flowing from stock prices (ASI) movement to the interest rate in the country. It implies that the interest rate is very instrumental to stock prices movement on the floor of the Nigeria Stock Exchange.

CONCLUSION AND RECOMMENDATION

5.1   Discussion and Conclusion
The study investigated the effect of exchange rate on stock price movement in Nigeria. Evidence from Augmented Dickey-Fuller (ADF) unit root test indicated that inflation and interest rate unit root were stationary at level I(0) while exchange rate, gross domestic product, and all share prices were stationary at first difference I(1). Evidently, the result nullified the rule of thumb in accepting Johansen cointegration and validated the rule of ARDL base on the mixed order of integration. Hence, Pesaran ARDL bound test was used to test for the presence of co-integration among the variables as it suited the study while the study showed evidence of long run relationship among the variables.

The long run relationship between exchange rate and stock prices movement indicated that the F-statistic of 15.27312 was higher than the lower and upper bound values of 2.86 and 4.01 respectively. This point to the importance of exchange rate in the movement of stock prices in Nigeria, hence exchange rate has a longrun relationship with stock prices movement in Nigeria. This therefore, implied that exchange rate system of a country has the propensity and the magnitude to accelerate the pace of stock prices on the floor of the capital market in an economy.

The result of the study both at the longrun and short run, it was revealed that exchange rate has a significant positive and negative effect on all share index in the long run as well as in the short run respectively. This result validates the finding of Adaramola (2012). Gross domestic product has a negative significant effect both on the long run and short run respectively with stock prices. Inflation has a significant negative effect with stock prices on the long run while it depicted an insignificant negative effect with stock prices on the short run. Interest rate revealed a positive and insignificant effect on the long run with stock prices while on the short run, the reverse is the case indicating negative and insignificant effect. The result equally validates the findings of Okoro (2017). Also, there was evidence that disequilibrium in all share index is restored back to equilibrium within a year if there is any short run fluctuation in the explanatory variables because the coefficient of the ECM was significant with the correctness of its sign though with small magnitude. Lastly, the Pairwise granger causality test indicated a uni-directional

causality running from all share index to interest rate without a feedback effect. This implies that the interest rate variable has the propensity to drive the stock prices in the stock market of the economy. Also, there exists uni-directional causality between EXR and INT and GDP to INT as evident by their probability values. This is on basis that the F-statistics 3.21029 and 3.20925 is greater than 2 with probability value < 0.05. This result is consistent with the finding of Adaramola (2012) who found a uni-directional causality between exchange rate and stock prices movement in Nigeria. On the whole, the study concludes that macroeconomic variables weakly affect stock market prices movement in Nigeria as evidenced by Adeniyi (2015).

5.2   Recommendations

The study proffered the following recommendations based on the test of hypotheses:

the study in its recommendation proposes that monetary authorities should focus more on keeping the inflation rate within range so as to promote the stock market;

the study suggests that given the nature of the mutual relationship between exchange rate and stock prices, policy makers should consider the development in the stock market so as to come up with effective exchange rate policy for a sustainable economic drive in the country;

conducive business environment should be stimulated by the government in order to enhance the real sector and boost the economy through an increase in savings and investment.

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