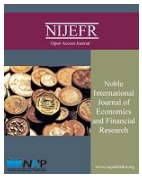
Noble International Journal of Economics and Financial Research
ISSN(e): 2519-9730 ISSN(p): 2523-0565
Vol. 06, No. 05, pp: 99-109, 2021
Published by Noble Academic Publisher
URL: www.napublisher.org
DOI: https://doi.org/10.51550/nijefr.65.99.109



Original Article **Open Access**

Macroeconomic Effects on Stock Market Returns in Nigeria

Article History

Received: 9 September, 2021
Revised: 25 October, 2021
Accepted: 15 November, 2021
Published: 23 November, 2021

Ekpete, Marshall Simeon
Department of Banking and Finance, Rivers state University

Kenn-Ndubuisi, Juliet Ifechi*
Department of Banking and Finance, Rivers state University, Nigeria

Abstract: The purpose of this study is to investigate the relationship between macroeconomic effects on stock market returns in Nigeria employing the CBN annual time series data spanning from 1985-2019. The study applied unit root test, auto-regressive distributed Lag and granger causality tests to investigate the relationship between all share index and interest rate, inflation rate, exchange rate. The unit root tests results for stationarity revealed that the entire variables are reliable for economic decisions. The findings of the study revealed that interest rate was negative and not significantly related with the all share index; also inflation rate was negative and not significantly related with the all share index while exchange rate was positive and significantly related with the all share index. The granger causality result revealed Uni-directional causality which implies no causality. This study recommends that macroeconomic factors should be adequately managed by the Central Bank of Nigeria with the view to promoting investors' confidence in the stock market.

Key words: Stock Market Returns, Inflation, Interest Rate, Exchange Rate.

1. Introduction

Stock market is a propeller of economic growth and development and it also provides the institutional framework for making available long-term capital through the issuance of shares and stocks etc. for users of funds, Cagnetti (2010), Wei *et al.* (1991).

The relationship between the stock market and the growth of the economy is strengthened by some macroeconomic influences such as inflation, exchange rate, and interest rate based on the fact that changes in stock prices are hinged on the behaviour of macroeconomic variables, Elly and Oriwo (2012).

Poor estimation of expected stock market returns due to the variation of price of financial assets could send negative signals to the economy (stock market volatility) over a period. Investors are concerned about normal returns as a result of this stock market volatility.

Porteba (2000) opined that a volatile stock market enfeebles investors' confidence thereby creating issues in gathering data of stock returns and as well increase the risk of equity investments.

Frimpong and Oteng-Abayie (2006) raised another concern arising from the wrong estimation of stock market returns as a result of volatility which leads to the alteration of investors' portfolio allocation reason being that, investors hold more stocks in their portfolios to take advantage of diversification.

Clearly the challenges associated with stock market volatility are also associated with developing economies due to its fragile nature. These volatility shocks are transmitted into the macro-economy, hence the need to factor the influence of the macro-economy in modeling market returns, Alile (1984); Atje and Jovanovic (1993); and Oyejide (1994).

The volatility shock coupled with macroeconomic uncertainties further retards the development by the stock market as financial markets are meant to propel economic progress, bearing in mind the history of the global financial crisis that badly affects developing countries, an understanding of the future that could hinder underestimation of the market returns become the motivation for this study Osazevbaru (2014).

The general objective of this work is to investigate macroeconomic effects on stock market returns in Nigeria using the relationship existing between interest rate, inflation rate, exchange rate and stock market returns.

2. Inflation Rate and Stock Market Returns

Economic theory, intensify the existence of a relationship between inflation rate and stock market returns, yet, the causal link has constantly posed some dilemma about whether the causality is unidirectional or bidirectional, Barnor (2014).

The relationship between inflation and stock returns can be positive or negative depending on whether the economy is facing unexpected or expected inflation. Expected inflation happens when demand exceeds supply, causing an increase in prices to stimulate more supply. Since this is expected by the firms, increase in prices would also increase their earnings which would lead to them paying more dividends thereby increasing the price of their stocks as well. On the other hand, when inflation is unexpected, an increase in price will lead to the increase in cost of living and this will shift resources from investment to consumption. Indeed, as inflation increases, nominal interest rates will also increase. The discount rate used to determine intrinsic values of stocks will therefore increase, and thus this will reduce the present value of net income leading to lower stock prices. Moreover, if the price elasticity of demand for the firm´s products is high, a rise in inflation may cause a decline in a firm's sales and net income, and thus its stock price, Talla (2013).

This negative relationship between unexpected inflation and stock market return is hypothesized by Fama (1981) as a function of the relationship between unexpected inflation and real activity in the economy. Patra and Poshakwale (2006) classified stock market return and inflation relationship into three categories: (i) No correlation between inflation and stock market returns (ii) Inverse correlation between inflation and stock market returns and inflation which is contrast to the generalized Fisher hypothesis (iii) Positive relationship between stock market returns and inflation which is consistent with the generalized Fisher hypothesis.

Fisher (1930) hypothesized that stock market returns is independent of inflation expectations, but the two variables, namely inflation and stock market returns are positively related. Fisher's conclusions and hypothesis gave credence to the assertion that if inflation and stock market returns are positively related, then, equities serve as a hedge against inflation. However, Fama (1981) further pronounced the ambiguity of what Fisher postulates and explained that, the relationship between inflation and stock market returns can be significantly negative.

The Fischer hypothesis is of prime significance in the field of global finance, because it sheds light on the expected nominal stock market returns, which equates the sum of expected inflation and real rate of return.

The "Fisher Effect" postulates that expected nominal asset returns have a unitary effect on expected inflation. Thus, the hypothesis predicts a direct positive relationship between inflation and stock market return.

From Fisher's findings, stocks can be used as a hedge against inflation, and investors will be rewarded for inflationary tendencies on an economy. This means real stock market returns are not affected by inflation.

Olufisayo (2013) examines the relationship between inflation and stock price index in Nigeria over the period 1986 – 2010 employing the Vector Error Correction Model to confirm the existence of long run relationship between inflation and stock price index. Moreover, the results provided evidence in support of Fisher effect in the short run and long run. This suggests that stocks are good inflation hedges both in the short and long run.

Mousa *et al.* (2012) examined the impact of inflation on stock prices at the Amman Stock Exchange. They obtained data from the CBJ and Department of Statistics in Jordan. The result reveals that such companies like (JOIN, JOEP, NPSC, ZAR, ACDT, ELZA, and DADI) are negatively correlated against inflation. Whereas the other selected companies such as (ARBK, CABK, and JOPH) shows a slightly positive correlation between stock price changes and inflation.

Ibrahim and Agbaje (2013) investigated the relationships between stock returns and inflation in Nigeria using monthly data of the All Share Price Index from the Nigerian Stock Exchange and Nigerian Consumers Price Index ranging from January 1997 to 2010 using the Autoregressive Distributed Lag (ARDL) bound test as proposed by Pesaran M. H. (1997) and Pesaran M. *et al.* (2001) to analyze data. The result showed a long run relationship between stock returns and inflation. While, the short run dynamic model reveals that the speed of convergence to equilibrium is moderate indicating a short run relationship between stock returns and inflation.

3. Exchange Rate and Stock Market Returns

The process for exchanging the currency of one country for the currency of another is known as exchange rate, Singh *et al.* (2011). It is the price paid for a country's currency relative to another country's currency, Olweny and Omondi (2011). Also, Exchange rate movements frequently focus on changes in credit market conditions, reflected by changes in interest rate differentials across countries, and changes in the monetary policies of the Central Banks, Singh *et al.* (2011).

Exchange rate and stock market returns are both considered as crucial elements in influencing the economic development of many countries, Chauque and Rayappan (2018). Kutty (2010) posit that movements of the exchange rate can have a huge impact on the cash flows of multinational companies, since the performance of these companies not only depend on the resources that companies possess, but also on the fluctuations of the currencies, assuming there will always be a conversion from one currency to another.

The profit-maximizing investors in an efficient market will ensure that all the relevant information currently known about changes in macroeconomic variables are fully reflected into the current stock prices, so that investors will not be able to earn abnormal profit through prediction of the future stock market movements Singh *et al.* (2011).

Surian *et al.* (2015) they investigate the relationship between the stock market and exchange rate of Pakistan. The data is on monthly basis and the time period is from January 2004 to December 2009. The ADF unit root test and granger causality test was employed to analyze data. The result reveals no relationship between exchange rate and stock price and both the variables are independent of each other.

Jamil and Ullah (2013) examines the impact of foreign exchange rate on stock prices in Pakistan using unit root test, co-integration and error correction model technique to analyze USD to PKR exchange rate on the stock return market. The stock market return has been studied by KSE 100 Index. The findings revealed that a relationship exist between the two variables in the short run in Pakistan.

Sani and Hassan (2018) examine the linkage between exchange rates and stock market in Nigeria using annual data from 1985 to 2015. They utilized Autoregressive Distributed Lag (ARDL) model and Granger Causality tests to study Exchange rate, economic growth, money supply and stock market (i.e., all share indexes) were captured in the model. The results show that exchange rate and economic growth have positive and statistically significant impact on stock market in Nigeria. Granger causality results indicated that there is unidirectional causality running from exchange rate to stock market. This study recommended that effective implementation of existing policy instruments by harmonizing monetary and fiscal policies in order to maintain stable exchange rate and avoid structural break that affect the whole system including the stock market.

Khan M. K. (2019) investigated the influence of exchange rate on the stock returns of Shenzhen stock exchange from January 2008 to December 2018 by utilizing ARDL model for checking the short run and the long run association between the study variables. The estimated ARDL results indicate that exchange rate has a negative and significant influence on the stock returns of Shenzhen stock exchange. While Inflation and interest rate results indicate a negative and statistically significant effect on the stock returns. The study recommended that policy makers in Central bank need to make such policies that helps to stabilize the exchange rate.

Huy (2016) studied the causal relationship between exchange rates and stock prices during pre and post financial crisis in Vietnam using daily data from 2005 to 2015. The Johansen and Juselius (1990) co-integration test and short - run dynamic causal relationships by Toda and Yamamoto (1995) and Variance decompositions (VDCs) analysis was employed to expresses the exchange rates (stock prices) changes on the forecast error variance in stock prices (exchange rates). The study revealed that exchange rates and stock prices were non- normally distributed.

4. Interest Rate and Stock Market Returns

The interest rate is defined from two perceptions, to the borrower; it is the cost of borrowing money while a lender views interest rate as the gain from lending money. An increase in the interest rate will result in falling stock prices due to the fact that high interest rate will increase the opportunity cost of holding money, causing substitution of stocks for interest bearing securities. Interest rate is one of the important macroeconomic variables and is directly related to economic growth. The interest rate is expected to be negatively associated to stock returns.

Stock returns are sensitive to interest rates. Researchers have reported that the financial structure of some industry makes the firms in that industry more susceptible to interest rates volatilities than others, Khan M. R. and Mahmood (2013).

Numerous studies have empirically tested interest rate sensitivity to stock market returns, some have reported an inverse relationship between interest rate and stock returns, and In contrast, some studies had reported a direct relationship between stock returns and interest rates, Titman and Warga (1989).

Interest rate sensitivity to stock returns can also be subject to causality. The effect of interest rates on the bond market is direct; however, interest rates sensitivity to stock returns had been inconsistent, Park and Choi (2011).

Amarasingh (2015) examines the causal relationship between stock price and interest rate, using monthly data of Central Bank of Sri Lanka from January 2007 to December 2013. The unit root test and granger causality test were employed to analyze variables. The result of the regression shows that interest rate is a significant factor for stock return changes and interest rate has significant negative relationship with ASPI.

Otieno *et al.* (2017) investigated the effects of Interest Rate on Stock Market Returns in Kenya using monthly data from 1st January 1993 to 31st December 2015 employing the Autoregressive Fractionally Integrated Moving Average (ARFIMA) model and granger causality test to analyze data. Results indicated that the 3-month Treasury Bills rate, lending rate and stock market returns are fractionally integrated which implies that shocks to the variables persist but eventually disappear. The results also revealed that the cointegrating residuals are fractionally integrated which suggests that a new and harmful long-run equilibrium might be established when each of the measures of interest rate is driven away from stock market returns. Additionally, the results indicate that the 3-month Treasury Bills rate and lending rate negatively Granger cause stock market returns in the long run. This suggests that stocks and Treasury Bills are competing investment assets.

Eita (2014) analyzes the causal relationship between interest rate and stock market return in Namibia for the period 1996 to 2012, using co-integrated vector auto-regression and granger causality test methods. The result shows a negative relationship between stock market returns and interest rates. The granger causality test indicates that there is bi-directional causality between stock market returns and interest rate. The results suggest that contractionary monetary policy through higher interest rate decreases stock market returns in Namibia.

Alam and Uddin (2009) examined the relationship between interest rate and stock price in Developed and Developing Countries using the monthly data from January 1988 to March 2003 of fifteen developed and developing countries- Australia, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, South Africa, Spain, and Venezuela. Both time series and panel regressions was also used to investigate the reasons of market inefficiency, relationship between share price and interest rate, and changes of share price and changes of interest rate. The empirical results of all the countries found that interest rate has significant negative relationship with share price and for six countries it is found that changes of interest rate has significant negative relationship with changes of share price.

Ali *et al.* (2010) examined the causal relationship between macro-economic indicators and stock market prices in Pakistan using data from June 1990 to December 2008. The statistical techniques used include unit root Augmented Dickey Fuller test, Johansen's co-integration and Granger's causality test. The study found co-integration between industrial production index and stock exchange prices. However, no causal relationship was found between macro-economic indicators and stock exchange prices in Pakistan.

Ilahi *et al.* (2015) investigate the linkage between macroeconomic variables (inflation rate, exchange rate and interest rate) on stock market returns in Pakistan using secondary data of January 2007 to December 2012. The multiple linear regressions were employed to analyze data. The result showed a weak connection between macroeconomic variables and stock market returns.

Akter *et al.* (2020) examine the dynamic relationship between stock market and macroeconomic variables in Bangladesh, using Monthly data from June, 2003 to June, 2015. The DSE index, Exchange rate, Industrial production and Reserve are the study variables. Their empirical results show that the stock market returns and macroeconomics variables have no long-term equilibrium relationship.

5. METHODOLOGY

Our study will explore the relationship between macroeconomic effects on stock market returns. Considering the positivism perspective, our conceptual model comprising of these two variables that will lead to a statistical investigation, assuming the role of an objective analysis about data that was obtained from Central Bank of Nigeria Statistical Bulletin of various issues as annual time series spanning from 1985 to 2019.

6. MODEL SPECIFICATION

6.1. Auto-Regressive Distributed Lag

The Autoregressive Distributive Lag (ARDL) model is adopted as a method of estimation in this study. This model is advantageous over other techniques of co- integration because it permits the use of variables that become stationary without differencing (I(0) and variables that become stationary after first differentiation I(1), it does not accept variables that become stationary after second differentiation (I(2)). Also, this technique can be applied irrespective of whether the variable is I(0), I(1) or fractionally co-integrated (Pesaran M. H., 1997). Rather than having a multiple equation to estimate as in the case of the Vector Autoregressive (VAR) model, it involves just a single-equation set-up, which makes it simple to implement and interpret. Furthermore, the error correction term (ECT) which integrates short-run adjustments with long-run equilibrium without losing long-run information, can be derived from ARDL through a simple linear transformation.

6.1.2. Error Correction Model (ECM)

Co-integration is a prerequisite for the error correction mechanism. Since co-integration has been established, it is pertinent to proceed to the error correction model which measures the speed of adjustment back to equilibrium relationship. The ECM is significant if it has a negative sign in either over parameterized or parsimonious. This implies that the value of the dependent variable adjusts rapidly to changes in the independent variables. Equilibrium correction models have been earlier been applied to analyze economic data in Sargan (2021), though it was the papers of Engel and Granger (1987) that clarified the relationship between ECM and co-integration, in the sense that, any ECM will generate co-integrated variables and co-integrated variables can be expressed as solutions of equilibrium correction models.

The Error Correction Model is empirically stated as thus:

$$\Delta ASI_t = \beta 0 + \beta_1 \Delta INT_t + \beta_2 \Delta INF_t + \beta_3 \Delta EXC_t + \beta_4 \Delta GDPG_t + \beta_5 \Delta IND_t + ECM_{t-1}$$

Where:

Δ = Difference Operator

t = Time lag

$\beta 0$ = Constant

$\beta 1 + \beta 5$= Coefficients

ECM_{t-1} = ECM parameter

Data Presentation

Summary of data collected for analysis

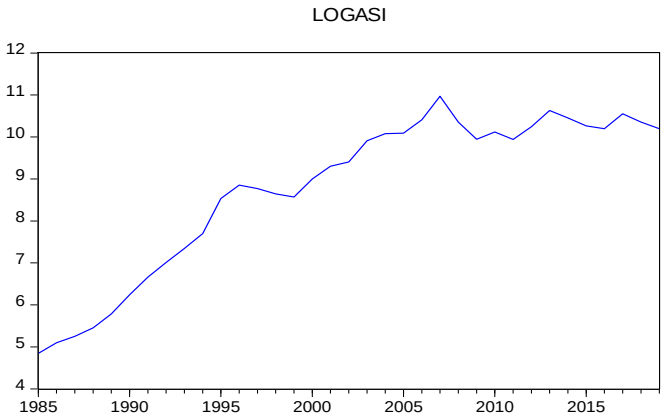
Year	All Share Index (0000) (ASI)	Interest Rate (INT)	Inflation (INF)	Exchange Rate (EXR)
1985	127.3	11.75	7.44	0.89
1986	163.8	12	5.72	2.02
1987	190.9	19.2	11.29	4.02
1988	233.6	17.6	54.51	4.54
1989	325.3	24.6	50.47	7.39
1990	513.8	27.7	7.36	8.04
1991	783	20.8	13.01	9.91
1992	1107.6	31.2	44.59	17.3
1993	1543.8	36.09	57.17	22.05
1994	2205	21	57.03	21.89
1995	5092.2	20.79	72.84	21.89
1996	6992.1	20.86	29.27	21.89
1997	6440.5	23.32	8.53	21.89
1998	5672.7	21.34	10	21.89
1999	5266.4	27.19	6.62	92.69
2000	8111	21.55	6.93	102.11
2001	10963.1	21.34	18.87	111.94
2002	12137.7	30.19	12.88	120.97

2003	20128.9	22.88	14.03	129.36
2004	23844.5	20.82	15	133.5
2005	24085.8	19.49	17.86	132.15
2006	33189.3	18.7	8.23	128.65
2007	57990.22	18.36	5.39	125.83
2008	31450.78	18.7	11.58	118.57
2009	20827.17	22.62	12.56	148.88
2010	24770.52	22.51	13.72	150.3
2011	20730.63	22.42	10.84	153.86
2012	28078.81	23.79	12.22	157.5
2013	41329.19	24.69	8.48	157.31
2014	34657.15	25.74	8.06	158.55
2015	28642.25	26.71	9.01	193.28
2016	26874.62	27.29	15.68	253.49
2017	38243.19	30.68	16.52	305.79
2018	31430.5	31	12.09	306.08
2019	26842.07	31.01	11.04	306.92

Source / Table 1: Central Bank of Nigeria Statistical Bulletin of various years.

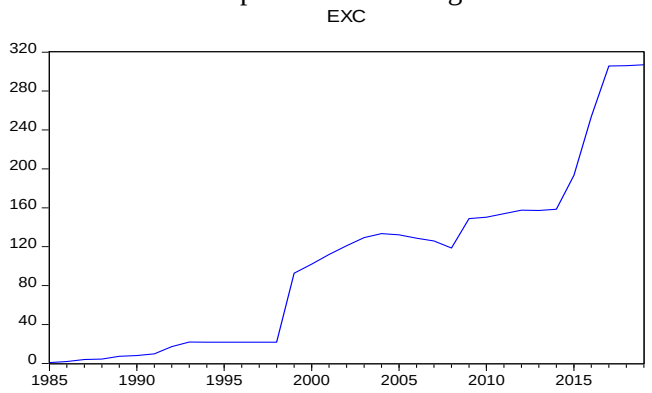
Results and Discussion of Results

Trend Analysis



Source/ Figure 1: Eviews output 10, Trend Analysis of All Share Index

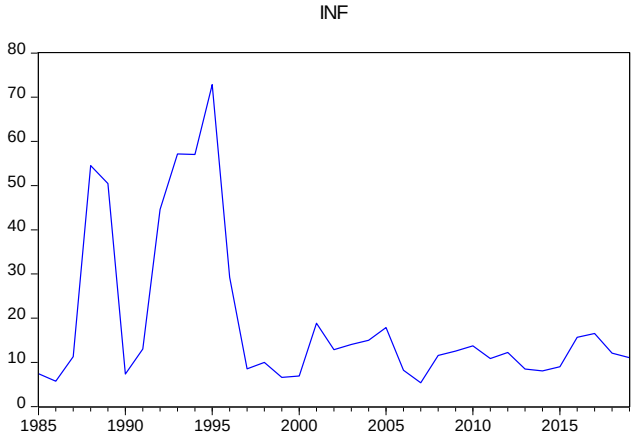
The Nigerian Stock Exchange is considered young comparable to other reputable markets, it is seen as one of the fast-growing emerging financial market in recent years, full of growth potentials. It is proxied by the All Share Index which is a measure of how well the market is performing. This is evident in the growth performance of the All Share Index shown in the above graph. The ASI recorded a rapid increase from 1985 to 2007 and maintained a positive oscillating trend across the remaining years.



Source/ Figure 2: Eviews output 10, Trend Analysis of Exchange Rate

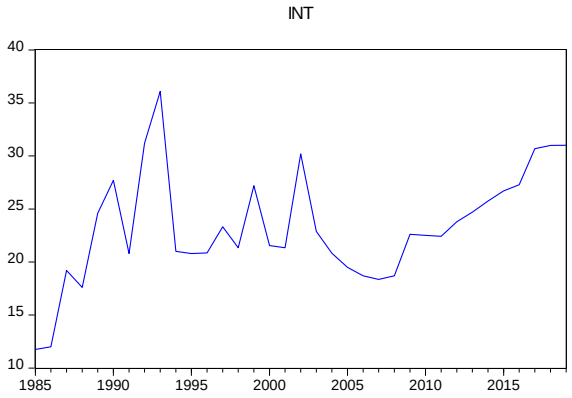
Nigeria's Exchange rate against the dollar has been on the increase since 1985. It reached an all-time high in 2018 at N306.08 against the USD. It has not been stable under a culture of increased importation of goods and services. It is evident that from 1986 which saw the introduction of the

Structural Adjustment Programme, the Naira has been depreciating against the United States Dollar. This deterioration has been consistent since 1986 in spite of various economic reforms and exchange rate regimes.



Source/ Figure 3: Eviews output 10, Trend analysis of Inflation

Inflation is commonly known as the general rise in price level of goods and services. It has assumed an escalating trend across the period of 1985- 2019, at a double digit rates in Nigeria except for 1985 at 7.44%, 1986 at 5.72%, 1990 at 7.36%, 1997 at 8.53%, 1999 at 6.62%, 2000 at 6.93%, 2006 at 8.23%, 2007 at 5.39%, 2013 at 8.48%, 2014 at 8.06% and 2015 at 9.01% that have recorded single digit rates. These high double-digit numbers will decrease the purchasing power of the naira due to the rise in prices across Nigeria.



Source/ Figure 4: Eviews output 10, Trend Analysis of Interest rate

The lending Interest is the bank rate that usually meets the short- and medium-term financing needs of the private sector. It recorded a low of 11.75% in 1985 and a high of 36.09 in 1993. Subsequently, it has assumed an undulating trend with a steady rise from 2010. It is expected that interest rates will not reach maximum values as improved credit conditions in the banking system and the implementation sustainable monetary policies.

Descriptive Statistics

Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max.
ASI	16599.58	15117.85	127.3000	57990.22
EXC	104.9526	92.14513	0.890000	306.9200
INF	19.33829	17.91818	5.390000	72.84000
INT	23.31229	5.293934	11.75000	36.09000

Source / Table 2: Computation from E-views 10

Stationarity Test

Showing unit root test (ADF)

Variables	ADF Stat. at I(0)	5% Critical Value at I(0)	ADF Stat. I(1)	5% Critical Value I(1)	Remarks
LOGASI	-0.685599	-3.548490	-4.991805	-3.603202	I (1)
EXC	-2.281790	-3.552973	-4.233575	-3.552973	I (1)
INF	-3.717391	-3.552973	Nil	Nil	I (0)
INT	-3.449790	-3.548490	-6.260526	-3.595026	I (1)

Source/ Table 3: E-views 10

From table 3 above, INF were integrated of order zero 1(0), that is stationary at levels; while LOGASI, EXC, and INT were integrated of order one 1(1), stationary at first difference. In the present of mixed order of integration, the Auto-regressive distributed lag model becomes the preferred approach for further analysis.

ARDL Estimate

ARDL Estimate

Variable	Coeff.	Std. Error	t-Stat.	Prob.*
LOGASI (-1)	0.920830	0.064427	14.29260	0.0000
EXC	0.036955	0.014068	2.626889	0.0133
INF	-0.002248	0.004711	-0.477222	0.6373
INT	-0.008431	0.010473	-0.804994	0.4284
C	0.671428	0.484895	1.384689	0.1784
F = 205.9, F-Prob. = 0.000000, DWS=2.21, Adj-R = 0.98				

Source/ Table 4: Eview 10 output, 2020

In the short run, macroeconomic variables were not significantly related with all share index. The results reveal that exchange rate is positive and have a significant relationship with all share index. A percent increase in exchange rate would lead to about 0.13 percent increase in all share index. This indicates that exchange rate does not stimulate all share index in Nigeria. The reasons are that the brokers have the monopoly on stock prices and they run the stock market according to their own utility. They speculate the market and get the maximum benefits while the investors gain ultimate loss. The phenomena of determining the price is demand and supply. The movements/fluctuations in demand and supply determine the price so exchange rate may not be able to impact the price strongly.

Interest rate is negative and is not significantly related with all the share index. A 1 percent increase in interest rate would reduce all share index by about 0.84 percent. This shows that the determinants of stock market performance, interest rate (INT) was found to retard the performance of Nigerian stock market between 1985 and 2019. This is not in tandem with the apriori expectations of interest rate. When the interest rate guarantees higher returns, this will increase the demand for money market instruments and caused downward pressure on the changes in NSE all share index.

Inflation rate is negative and has no significant relationship with all share index. A 1 percent increase in inflation rate would reduce all share index by about 0.22 percent.

The coefficient of inflation is not statistically significant, and the negative sign can be explained by the short-run sample period (Jaffe and Mandelker, 1976). As inflation rises, companies increase their profits while purchasing power falls. What is more, interest rates rise, increasing the cost of funds, and as result companies reduce their investment projects. All these ramifications may have contradictory effects on all share index movements, but taking into consideration the economic theory that there should always be inflation, although this relationship shouldn't be too strong. Finally, using the Auto-regressive distributed lag method; the all share index is explained quite satisfactorily by the variables, since the R^2 is in the order of 98 %, a fairly high percentage.

The adjusted R2 is a special form of R2, the coefficient of determination R^2 or the measure of goodness of fit was used to judge the explanatory power of the explanatory variables on the dependent variables. However, if R^2 equals one, it implies that there is 100% explanation of the variation in the dependent variable by the independent variable and this indicates a perfect fit of regression line. Therefore, the higher and closer the R^2 is to 1, the better the model fits the data.

The Durbin-Watson statistics of (2.21) is above the traditional benchmark of 2.0 in the model and the F-stat (F-stat 205.9, p=0.000000) of the model was also significant at five percent confidence level showing that the model has a good fit and is good for our purpose.

Findings

Furthermore, we adopt least squares estimating procedures as methodology and the results has it that:

(i) Exchange rate is positive and has a significant relationship with all share index.
(ii) Interest rate is negative and insignificantly related to all share index.
(iii) Inflation rate is negative and has no significant relationship with all share index.

Conclusion and Recommendation

The study found a linkage between macroeconomic factors (Exchange rate, inflation and interest rate) and stock markets returns in Nigeria.

Stock markets affect the overall economic development of a country. Also from the literature, stock markets can give a big boost to economic development through the creation of liquidity.

From the avalanche of literature, it is established that the influence of macroeconomic variables on stock market returns (proxied by the All Share Index) is crucial to the efficiency of the stock market and growth of economy at large. Therefore, we recommend the following:

1. Macroeconomic variables should be adequately managed by the Central Bank of Nigeria with the view to promoting investors' confidence in the stock market.
2. For accurate and reliable prediction of stock market returns, we recommend that the financial regulatory authorities should manage the monetary policy towards achieving government's set macroeconomic objectives.

References

Akter, S., Rana, S. and Anik, H. T. (2020). The Dynamic Relationship between Stock Market Returns and Macroeconomic Variables: An Empirical Study from Bangladesh. *Journal of Management, Economics and Industrial organisation, 4(1): 40 -60, 2521 – 7054*. http://doi.org/10.31039/jomeino.2020.4.1.3

Alam, M. and Uddin, G. S. (2009). Relationship between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries. *International Journal of Business and Management, 4(3): 43-51*.

Ali, I., Rehman, K., U., Yilmaz, A. K., Khan, M. A. and Afzal, H. (2010). Causal relationship between macro-economic indicators and stock exchange prices in Pakistan. *African Journal of Business Management, 4(3): 312-19*.

Alile, H. I. (1984). *The Nigerian Stock Exchange: Historical Perspective.* Operations and Contributions to Economic Development Central Bank of Nigeria Bullion.

Amarasingh, A. (2015). Dynamic Relationship between Interest Rate and Stock Price: Empirical Evidence from Colombo Stock Exchange. *International Journal of Business and Social Science, 6(4): 92-97*.

Atje, R. and Jovanovic, B. (1993). Stock Markets and Development. *European Economic Review, 37(2-3): 632-40*.

Barnor, C. (2014). The effect of macroeconomic variables on stock market returns in Ghana (2000-2013) Walden dissertations and doctoral studies, 132. https://scholarworks.walden.edu/dissertations/132

Cagnetti, A. (2010). CAPM and APT in the Italian Stock Market: An Empirical Study, (Unpublished article).

Chauque, D. F. F. and Rayappan, P. A. P. (2018). The Impact of Macroeconomic Variables on Stock Market Performance: A Case of Malaysia. *Edelweiss AppliSci Tech, 2: 100-04*.

Eita, J. H. (2014). Interest Rate and Stock Market Returns In Namibia. *International Business & Economics Research Journal, 13(4): 689-96*.

Elly, O. D. and Oriwo, A. E. (2012). The Relationship Between Macro Economic Variables And Stock Market Performance In Kenya. *DBA Africa Management Review, 3(1): 38-49*. https://www.researchgate.net/publication/325082981_The_relationship_Between_Macro_Economic_Variables_and_Stock_Market_Performance_in_Kenya#fullTextFileContent

Engel, R. F. and Granger, C. W. J. (1987). Co-integration and Error Correction: Representation, Estimation and Testing. *The Econometric Society, 55(2): 251-76.*

Fama, E. F. (1981). Stock returns, real activity, inflation, and money. *Journal of American Economic Review, 71(4): 545-65*.

Fisher, I. (1930). *The Theory of Interest.* New York: Macmillan.

Frimpong, J. M. and Oteng-Abayie, E. F. (2006). Modeling and Forecasting Volatility of Returns on the Ghana Stock Exchange Using Garch Models. *America Journal of Applied Sciences, 3(10): 2042-48*.

Huy, T. Q. (2016). The Linkage Between Exchange Rates and Stock Prices: Evidence From Vietnam. *Asian Economic and Financial Review, 6(7): 363-73*.

Ibrahim, T. M. and Agbaje, O. M. (2013). The Relationship Between Stock Return and Inflation In Nigeria. *European Scientific Journal, 9(4): 146-57*.

Ilahi, I., Ali, M. and Jamil, R. A. (2015). Impact of Macroeconomic Variables on Stock Market Returns: A Case of Karachi Stock Exchange. Available at SSRN 2583401. http://dx.doi/10.2139/ssrn.2583401

Jaffe, J. and Mandelker, G. (1976). The 'Fisher Effect' For Risky Assets: An Empirical Investigation. *Journal of Finance, 31: 447-58*.

Jamil, M. and Ullah, N. (2013). Impact of Foreign Exchange Rate on Stock Prices. *Journal of Business and Management, 7(3): 45-51*.

Johansen, S. and Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration With Application To the Demand For Money. *J. Econ. Stat., 52: 169-210*.

Khan, M. K. (2019). Impact of Exchange Rate on Stock Returns in Shenzhen Stock Exchange: Analysis through ARDL Approach. *International Journal of Economics and Management, 1(2): 15-26*.

Khan, M. R. and Mahmood, Z. (2013). Interest Rate Sensitivity and Stock Returns. *Business Review, 8(1): 20-33*.

Kutty, G. (2010). The Relationship Between Exchange Rates and Stock Prices: The Case of Mexico North American. *J. Finance Banking Res., 4: 1-12*.

Mousa, S. N., Al-safi, W., Hasoneh, A. and Abo-orabi, M. M. (2012). The Relationship between Inflation and Stock Price: A Case from Jordan. *IJAARS, 10: 46-52*.

Olufisayo, A. O. (2013). Stock Prices and Inflation: Evidence from Nigeria. *American Journal of Economics, 3(6): 260-67, 2166-496X*.

Olweny, T. and Omondi, K. (2011). The Effect of Macro-Economic Factors on Stock Return Volatility In the Nairobi Stock Exchange, Kenya. *Economics and Finance Review, 1(10): 34-48*.

Osazevbaru, H. (2014). Measuring Nigerian Stock Market Volatility. *Singaporean Journal of Business Economics and Management Studies*:

Otieno, D. A., Ngugi, R. W. and Wawire, H. W. N. (2017). Effects of Interest Rate on Stock Market Returns in Kenya. *International Journal of Economics and Finance, 9(8): 40-50*.

Oyejide, T. A. (1994). The Financial System and Economic Growth in the Context of Political Transition. *Central Bank of Nigeria Economic and Financial Review, 12(3): 260-67*.

Park, J. and Choi, B. P. (2011). Interest Rate Sensitivity of US Property/Liability Insurer Stock Returns. *Managerial Finance, Emerald Group Publishing, 37(2): 134-50*.

Patra, T. and Poshakwale, S. (2006). Economic Variables and Stock Market Returns: Evidence From the Athens Stock Exchange. *Applied Financial Economics, 16(13): 993-1005*.

Pesaran, M., Shin, Y. and Smith, R. (2001). Bounds Testing Approaches To The Analysis of Level Relationships. *J. Appl. Economic, 16(3): 289-326*.

Pesaran, M. H. (1997). The Role of Economic Theory In Modeling The Long-Run. *Econ J., 107: 178-91*. http://links.jstor.org/sici?sici=0013-0133%2819970...0.CO%3B2-K&origin=bc

Porteba, J. M. (2000). Stock Market Wealth and Consumption. *Journal of Economic Perspectives, 14(2): 99-118*.

Sani, B. A. R. and Hassan, A. (2018). Exchange Rate and Stock Market Interactions: Evidence from Nigeria. *Arabian Journal of Business and Management Review, 8(1): 2223-5833*.

Sargan, D. (2021). The Origins of Lse Econometric. *International Journal of Academic Research In Accounting, Finance and Management Sciences, 11(1): 2225-8329.* http://hrmars.com/index.php/pages/detail/publication-ethics

Singh, T., Mehta, S. and Varsha, M. S. (2011). Macroeconomic Factors and Stock Returns: Evidence From Taiwan. *Journal of Economics and International Finance, 2(4): 217-27*.

Surian, S., Kumar, M. D., Jamil, F. and Muneer, S. (2015). Impact of Exchange Rate on Stock Market. *International Journal of Economics and Financial Issues, 5(1S): 385-88*.

Talla, J. T. (2013). Impact of Macroeconomic Variables on the Stock Market Prices of the Stockholm Stock Exchange (OMXS30). Master's Thesis, Jonkoping International Business School, Jonkoping.:

Titman, S. and Warga, A. (1989). Stock Returns as Predictors of Interest Rates and Inflation. *Journal of Financial and Quantitative Analysis, 24(1): 47-58*.

Wei, K. C. J., Lee, C. and Chen, A. H. (1991). Multivariate Regression Tests of The Arbitrage Pricing Theory: The Instrumental Variables Approach. *Review of Quantitative Finance and Accounting, 1: 191-208*.