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IMPACT OF INTEREST RATE ON STOCK MARKET CAPITALIZATION AND SHARE INDEX IN NIGERIA

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ABSTRACT

Modern economies have developed mechanism, institutions and instruments that help to facilitate the mobilization of savings from those who save and to the economic units which invest or consume more than their own incomes. This process is known as financial intermediation and it is done through the financial market, which comprises of capital and money markets as well as other sub-markets plays crucial roles in the functioning of any modern economy. This paper is aimed at revealing the impact of interest rate on stock market capitalization and share index in Nigeria. This study combines descriptive and diagnostic designs. It examined the impact of interest rates on stock market performance. The study employed a time series analysis covering a period of 20 years (1995- 2015). Stock market capitalization and all shares index were used as measure of performance of the Nigerian Stock Market. The population of the study is the Nigerian stock market of the period under review and this also constitute the sample size. The sample size is justified because the market capitalization is found by multiplying the total number of shares by the current price. While all shares index is used to compute the ordinary shares of the NSE. The data obtained were fitted into the equations by Ordinary least-square(OLS) regression method. The linear relationship between the dependent and the independent variables were generated. In the model specification, interest rate served as the independent variable while stock market capitalization and all share index served as the dependent variable. Findings revealed that all the variables through the Augmented Dickey-Fuller (ADF) test are stationary. The regression result for the period under review showed that interest rates has negative influences on stock market capitalization and all share index of the Nigerian Stock Exchange vi's-à-vis stock market performance. The study recommends amongst other recommendations, that the CBN should continue to exercise control in the administration of interest rate through the fixing of the monetary policy rate because of its significant correlation with the stock market performance so as to effectively use the capital market as a tool for enhancing economic growth and development. In doing this, the CBN should ensure that the interest rate is kept moderate; this would result in more patronage of the capital market. This would enhance the performance of the stock market, which would in turn enhance economic growth and development

Key Words: **Interest Rate, Stock Market Capitalisation, Central Bank of Nigeria, Nigeria Economy, Share index.**

Stock market is a widespread feature of a today's economy and it is apparent to perform tasks that promote economic growth and development. It is an economic institution that promotes efficiency in capital allocation and formation. It aid governments cum industry to raise long – term capital for funding new projects, modernizing and expanding industrial and commercial concerns. Most modern economies like that of Nigeria are faced with the challenges of achieving a sustained economic growth and development with the ultimate objective of enhancing the welfare of its citizens. In order to achieve this, a modern economy needs to be harnessing the resources of all the economic units and directing them to productive uses. To achieve this, owners

of the resources should be willing to part with them either permanently or temporarily in exchange for other economic benefits.

Modern economies have developed mechanism, institutions and instruments that help to facilitate the mobilization of savings from those who save and to the economic units which invest or consume more than their own incomes. This process is known as financial intermediation and it is done through the financial market, which comprises of capital and money markets as well as other sub-markets plays crucial roles in the functioning of any modern economy. As in the opinion of Gurley and Shaw (1976), there is a relationship between real GDP and financial developments. Money market provide mechanisms through which short-term funds and financial investment with maturities of less than one year are sold or purchased while funds for maturity of more than one year transaction in the capital market. The market, investors provide long-term capital in exchange for long – term financial assets offered by the borrowers.

The Nigerian money markets comprises of deposits money banks and discount houses. They are regulated and monitored by the Central Bank of Nigeria (CBN) in alliance with the Nigeria Deposit Insurance Corporation (NDIC) and the Federal Ministry of Finance.

Each of the markets are divided into primary and secondary. Primary market deals with selling of new securities when they are issued, while the secondary market deals with existing securities. Effective functioning of the capital market (the main focus of this study) can be influenced by activities in the money market and one such way is through changes in interest rates (Daferighe & Aje, 2009).

There is a positive correlation between the level of an economy's financial development and its rate of growth and development. In addition to the type of relationship that exist between economic growth and financial development, many studies like that of Degregorio (1992); Baro (1995); and It is in view of this that this study within the domain of finance is being embarkedon within the specific area of financial market in order to investigate the impact of interest rates on the capital markets. The choice of stock market is because of its importance as the hub of the capital and its performance is a major determinant of the size and functioning of the capital market. The stock market performance would be represented by stock market capitalization and all shares index. The choice of interest rate is because it is a major determinant of activities in the money market. The research topic is topical because numerous scholars have conducted research on several macro economic variables of stock market performance, focusing on investor perspective using stock price and returns. Conversely, little attention has been paid to interest rates; which is an important factor. In addition, most of the relationship between stockmarketperformance and interest are based on developingeconomies like that of the United States (US). Examples of these include Mueller (1996); Little (1996); Wagner (2007); and Pento (2008).

Capital market plays an important role in the economy in the sense that it mobilizes local resources and channels them to productive sector. However, development of the capital market in Nigeria is indeed, a great catalyst to the internationalization of investment opportunities in the country, raising the chances of local and Foreign Direct investment (FDI) alongside portfolio investment. It constitutes the most significant institution for massive capital formation directed towards economic development.

The Nigeria Stock Exchange (NSE) is the pivot, which the entire capital market rotates (Ologunde, 2006). Market capitalization and all share indexes are some of the major determinants of the market size and performance of stock exchange market (Bakare, 2000). This is determined by the forces of demand and supply on securities. Patronage of the stock market helps in ascertaining the performance of the stock markets. However, interest rate paid by banks to depositors is another determining

factor to be considered.

While there have been several empirical studies as identified on impact of several macro-economic variables on stock market performance mainly on investors' perspectives beaming searchlight on stock prices and returns, not enough attention has been paid to interest rate, which is another important factor. In addition, most of the researches conducted are centered on the markets of the developed economies and generalization based on such on markets of other country without coordinate size and operation could be deceptive.

In view of this, the study intends to make contribution to knowledge by using data sort locally to investigate the impact of interest rates on stock market performance which is expected to be very relevant in Nigeria, other developing countries of Africa and other continents with similar realities.

Research Questions

To what extent does interest rate has impact on stock -market capitalization and share Index in Nigeria stock market?

Statement of the Hypotheses

H0 Interest rate has no significant impact on stock market capitalization and share Index in Nigeria stock market?

Literature Review: Conceptual, Empirical and Theoretical Discourse

Interest rate structure in Nigeria has ultimately been controlled and managed by the Central Bank of Nigeria (CBN), this is possible through fixing of Minimum Policy Rate (MPR). Jhingan (1997), posited that interest rate is classifiable into various categories such as deposit rates, lending rate, treasury bill rate, inter-bank rate, and Minimum Policy Rate. Oresotu (1992) says that the basic roles of interest rate in an economy in where decision of whether to borrow, invest, save/or consume are taken by individual economic agents, are summarized by International Monetary Fund (IMF) as earlier mentioned.

This study used the minimum rediscount rate (now Minimum Policy Rate), being the major determinant of all other interest rates in Nigeria.

Using conventional economic reasoning, interest rate has negative impact on stock market index. This means, when interest rate is high, investors will shift their money from higher risk instrument (stock market) to savings or fixed deposit accounts. On the other hand, when the interest rate is low, investors will move the money out to investments in stock market in the hope of a higher return.

This position is supported by several studies, like Mahmudul and Gazi (2009) carried out a study on 15 developed and developing countries and found out that interest rate has significant negative relationship with share price. Mukherjee and Naka (1995) studied Japanese economy and revealed that for the long-run, interest rate has negative impact on the stock market index in Japan

Joseph and Vezos (2006) using daily data showed that the stock returns are highly sensitive to interest rate and exchange rate changes.

Liow and Huang (2004) found that in the pre Asian financial crisis from December 1987 to July 1997, there exist a highly significant negative relationship between interest rate and the monthly excess return of the property stocks for Hong Kong, United Kingdom and Japan. They suggested a careful consideration by investors in their portfolio assembly and management to reduce the interest rate exposure.

In a study by Adam and Tweneboah (2008) in Ghana, using Johansen's co-integration and innovation accounting techniques, it reveals a co-integrating relationship between macroeconomic variables in that, there exist a long run relationship between the variables studied. The findings concludes that Interest rate has negative impact on the stock market in Ghana. Similarly, Kyereboah-Coleman and Agyire-Tettey (2008) showed that lending rates on lenders by commercial banks have negative impact on stock market performance in Ghana, and this prevents business growth significantly.

Co-integration can be tested for a pair of variables

from period to period. Nikiforos (2006) established that there were unstable degrees of relationship between interest rate and stock market from decade to decade in the United States. During the 1970s and the 1980s, no co-integrating relationship was found between the fed rate and the stock market index. However, the short-run relationship existed in the 1970s. In the 1990s, there exist a significant negative cointegrating relationship between those two variables

Furthermore, a study by Kurihara and Nezu (2006) showed that there is insignificant relationship between Japanese stock prices and interest rate, especially domestic interest rate. This is because the interest rate in Japan has implemented unparalleled monetary easing, by reducing the interest rate to near zero, this measn interest rate can hardly impact the stock market at all in such country. In March 2001, the Bank of Japan introduced quantitative easing scheme to end the deflation in Japan. The policy brought about increased stock price in Japan.

Ologunde et. al. (2006) studying the stock market capitalization and interest rate in Nigeria using an ordinary linear regression model. Their findings x-rayed that prevailing interest rate has positive influence on stock market capitalization. Increased interest rate will result to same in stock market capitalization. Economic growth and development is delayed. Hence Government can consequently plan and manage the interest rate to facilitate the growth of the stock market.

According to Mueller, 2006 Interest rate can affect, but not determine the stock market. When interest rate is increased, borrowing will become very difficult. Companies will have less money to expand their businesses and profit will be affected. Bonuses and dividends to employee and shareholders will be cut and the investors will be affected ultimately. Stock market becomes a less attractive instrument for investment. Hence, Since interest rate is determined by monetary policy of a country, policy makers and determinants should carefully plan and focus on it to attract investors to invest in the market (Zafar et. al., 2008).

Interest rate differs with time, default risk; changes in interest rate support substitution between stock market and money market instruments and approximate activities. Kevin (2000), opined that interest rates in the organized financial sector of the economy are guided within favoured range through monetary policy. Nonetheless, for unorganized financial sector, the rates are not restricted and may fluctuate broadly respecting the position of demand and supply of funds in the market. An investor has a duty to consider the level and growth in interest rates prevailing in the different sectors of the economy, and appraise their impact on the performance and profitability of companies. Chandra (2004) concludes that a rise in interest rate suppresses corporate profitability and in addition, leads to an increase in the discount rate applied to equity investors; both of which have unfavorable impact on stock prices, and vice-visa. Therefore when there is a rise in interest rate there is expectation of a possible impact; negatively on the performance of the organization. Smith (1990) in a study on the United States' economy founded that stock prices jump instantly after and sometimes before the Federal Reserve announces a cut in the interest rate or discount rate, or Chase Manhattan announces a drop in its prime loan rate. In the same vein, Goswami and Jung (1997), studied Korea economy and found that stock prices are negatively connected to long-term interest rates and positively related to short-term interest rate.

Theoretical Framework

The researchers rely on the following theories to back the study. There are so many theories to consider when talking about interest rate and market performance. However, the few theories below are considered to be appropriate for this study.

Fundamentalist View

They argued that at all time, individual security has an inherent or true value. This is the present value

of the culture receipts, accumulating to the security holder. This view agrees significantly with the basic valuation model. It is based on the postulation that the forecaster needs to consider the key factor affecting the economy, the Industry and Company (Olowe, 1997).

This group forecast stock prices in relation to market information about the economic, company and the industry. When the market predicts an event, such as the fiscal policies, national budget or exchange rate policies, the share prices are affected (Akinsulire, 2006). It may be argued that market price approaches 'true' value', that, it gets closer but never quite get there. At this period, new information may change the intrinsic or true value so that market prices will have to start choosing a new value such that to calculate the intrinsic value is to start predicting the market price.

Should the fundamentalists view be used as a guide to making investment decision, the buy and sell decision will be pedestal on the differences between inherent and market prices; if the intrinsic is greater than the market value, the investor should buy and sell in the opposite condition or situation. The amount of inconsistence and speed with the market approaches on intrinsic value may be regarded as signs of the degree of exactness in the market (Olowe, 1997).

Random – Walk Hypothesis

Random walk hypothesis posits that a new market price of share will stem only from the response of investors to new relevant information about the share and will be completely autonomous of the old market price. The random walk hypothesis is of the view that the fundamental value of stock price will be distorted as new information become accessible and the actions of investors is such that actual stock prices will oscillate at random from day to day around the true value. Because of random unpredictable movement in stock prices, an investor cannot safely rely on prophecy of such movement in deciding when to trade in securities (Olowe, 1997).

Random walk means that price changes are erratic, so using technical analysis to predict stock price is ineffectual. The relevant test of efficiency in this model is whether prices incorporate all information that is readily available at the time. The efficient markets hypothesis states that information on efficient financial markets reflect all new relevant information entirely. The three levels of efficiency are; the weak, semi-strong and strong form.

May (2000) in criticizing the random walk theory; puts forward two issues. That it is rational to expect that prices will rise over a period of time, to generate a positive return unless the return is entirely the result of dividend. Secondly stock prices are not arbitrarily determined but it is change in security prices that are erratically determined, security prices are rationally and efficiently determined by interest rate, earnings, and dividend policy.

Macroeconomist View

This is the usual method of using factor analysis to determine the factors affecting returns of asset, some scholars have measured macroeconomic factors to explain stock return and the results showed that changes in interest rate are associated with risk. They interpreted the study to be a reflection of changes in the rate of inflation, acting on the finding of Fama (1977) that changes in the rate of inflation are fully reflected in interest rates (Emenuga, 1994).

This approach attempts to examine the sensitivity of stock prices to changes in macro economic variables. The approach posits that stock prices are influenced by changes in money supply, interest rate, inflation and other macroeconomic indicators. It uses a general equilibrium approach, stressing the interrelationship between sectors as vital to the understanding of the doggedness and co-movement of macroeconomic time series, based on the economic logic, which suggest that everything does depend on everything else.

Research Methodology

Research Design

This study merges descriptive and diagnostic designs. It scrutinizes the impact of interest rates on stock market performance. It employed time series analysis; covering 20 years period (1995-2015). Stock market capitalization and all shares index were used as gauge of performance of the Nigerian Stock Market.

Population of the Study and Sampling Technique

The study's population is the Nigerian stock market of the period under review and this also constitute the sample size. The sample size is justified because the market capitalization is determined by multiplying the total number of shares by the prevailing price (Muller, 1996). While all shares index is used to compute the ordinary shares of the NSE (NSE fact book, 2015).

Data were sourced from the Central Bank of Nigeria (CBN) Statistical bulletin (1996 – 2015) and the Nigerian stock exchange (NSE) fact book (1996-2015). Stock market capitalization and all shares index had their data generated from NSE fact book for the period under study. The data on interest rates for the periods under study was extracted from the CBN statistical bulletin. This amongst other reason is to minimize bias and maximize reliability of the data used for the study

Method of Data Collection

There are three methods of data collection and these are; use of documents, observation and interviews or questionnaires, (Ghosh, 2006). The data of this study, therefore was obtained through the use of documents. These documents include NSE fact book and the CBN statistical bulletin. Therefore, the study employed the use of secondary data only.

Data Analysis and Model Specification

This study employs the multiple regression analysis technique for the purpose of data analysis where inferences were drawn. Regression analysis is the determination of the relationship that subsist between two variables for the purpose of forecasting for the future values of the variables under study. (Fagbohungbe, 2002).

Kighir, 2008 opined that multiple regression is employed where there are two or more independent variables. This implies that the study intends to assess the influence of independence variable of (x1, x2) on a dependent variable of (y1, y2). In multiple linear regression analysis, there is no limit theoretically to the number of variables that can be used. However in practice, there is a limit Kerlinger (1992).

Thus, $Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \ldots b_kx_k$

Because the research is a time series study, using past and present date to estimate the future, regression analysis was considered adequate to be used to analyze the data and see if there is any significant impact between the macroeconomics variables (interest, stock market capitalization and all share index under study. This study also utilize unit root test using Augmented Dickey Fuller Test (ADF).

Unit Root Test

It is Griffiths, Hill and George (1993) that argued that the usual statistical analysis of least squares holds only when the time series variables involved are stationary and that the opposite happens when they are non stationary and this has to be determined before performing econometric analysis. Stationary data is such that has it mean and variance to be constant (non-changing) over time and the value of covariance between two time periods depends only on the remoteness of lag between the two time periods which the covariance is computed.

Unit root tests were applied to test whether a series is stationary or not. Condition was tested using Augmented Dickey Fuller (ADF) [Dickey& Fuller, 1979: 1981; Duja Rati 2003; Enders, 1995.

Augmented Dickey Fuller Test

Augmented Dickey – Fuller Test (ADF) is a test for the root of units in a time series sample. It is an augmented version of the Dickey –Fullertest for a bigger and more complex set of time series

models. It makes a parametric correction in the original DF test for Higher Order Correlation by the presumption that the series follow an auto-regressive process AR. The ADF controls higher-order correlation by adding lagged difference term of the dependent variable to the right hand side of the regression. In agreement to this, Schwert (1989) suggested that ADF with long lags is superior to other models.

The general specification of the model is stated below;

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t$$

Where α is constant, β is the coefficient on a time movement or trend and P is the lag order or time delay of the autoregressive process. Imposing the constraints α=0 and β =0 corresponds to modeling a random walk and using the constraints β =0 corresponds to modeling a random walk with a float. Accordingly, there are three important versions of the test. By including lags of the order P the ADF formulation allows for higher – order autoregressive processes. This means P has to be determined when applying the test. One possible approach is to test down from high orders to the lower orders and examine the t-values on coefficients. An alternative approach is to examine information criteria such as Akaike Information Criterion (AIC) and Schwarz's Bayesian Information Criterion (SBIC).

The unit root test is then carried out under the Null Hypothesis $\gamma = 0$ as against the alternative hypothesis of $\gamma < 0$

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$$DF\tau = \frac{\gamma}{SE(\gamma)}$$

Once a value for the test statistic is computed, it can be compared to the relevant critical value for the Dickey – Fuller Test. If the test statistic is less (this test is non symmetrical so we do not consider an absolute value) than (a larger negative) the critical value, then the null hypothesis of $\gamma = 0$ is rejected and no unit root is present. The intuition behind the test is that if the series is integrated then the lagged level of the series (y_t-1) will provide no relevant information in predicting the change in y_t besides the one obtained in the lagged changes (Δy_{t-k}). In that case the $\gamma = 0$ null hypothesis is not rejected.

Regression Model

Model specification for this study is stated below.

MACAP $= + \beta_0$ IntR $+ \varepsilon$

ASI $= + \beta_0$ IntR $+ \varepsilon$

Where

MACAP = Stock market capitalization

IntR = Interest rate

ASI = All share index

In the first models, stock market capitalization served as the dependent variables, while interest served as the independent variable. In the second models, all share index served as the dependent variable, while interest served as the independent variable.

Justification of Data Collection and Analysis

Multiple regressions are the appropriate method of analysis when the research has a one metric dependent variable (Fagbohungbe, 2000). It has shown to be a strong tool used in developing economic and business models for analyzing the relationship between different variables (Hassan,

1995). The use of this tool for this study is because it permits the extraction of parametric estimates which show the impact of the various explanatory variables in predicting the dependent variables.

Data Presentation and Analysis

Data Presentation

Useful data on interest rate, stock market capitalization, as well as all share index for the period under covered are presented. The data used are presented and deductions were drawn on the basis of the significance of statistical test from the regression results of relevant variables. The data obtained were integrated into the equations using Ordinary least-square(OLS) regression method. The linear relationship between the dependent and the independent variables were breed. In the model specification, interest rate functioned as the independent variable while stock market capitalization and all share index introduced as the dependent variable.

See the table below for the date used.

Table 4.2: Yearly Time Series Regression Data

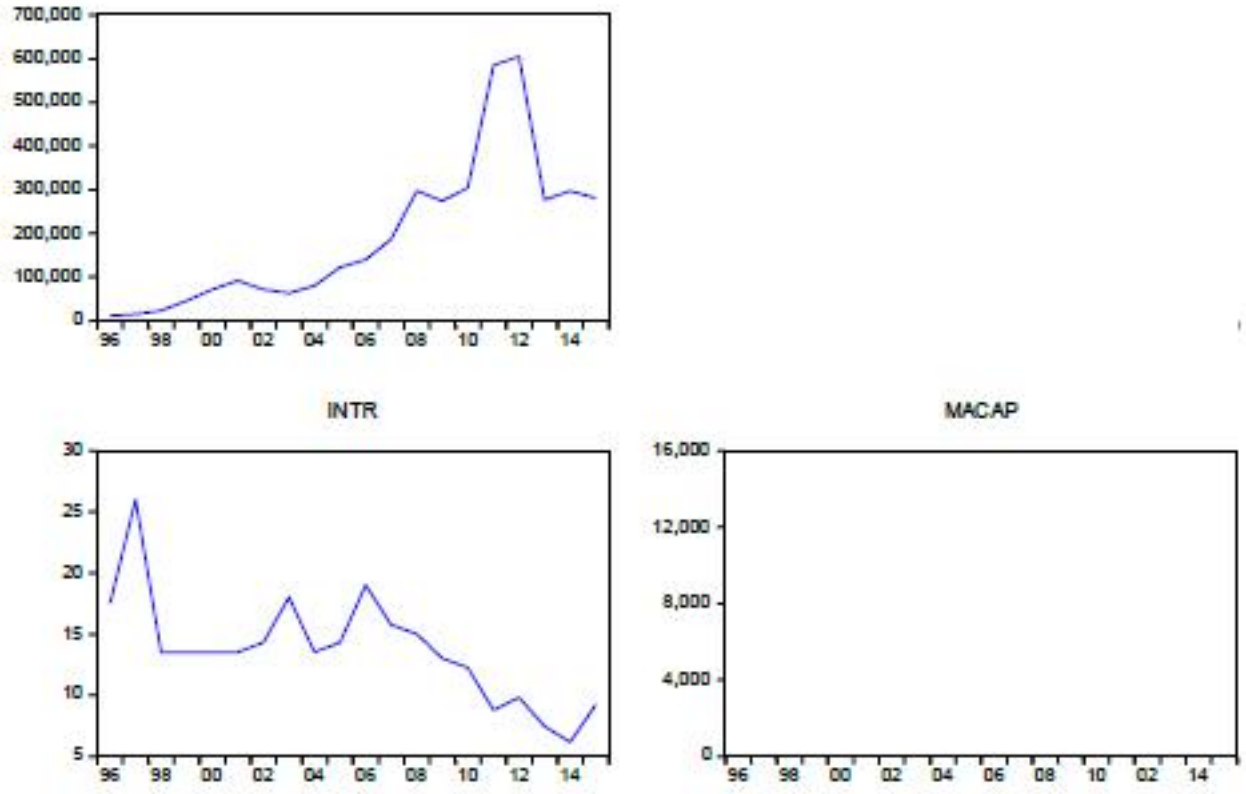
Year	MACAP	ASI	Intr
1996	31.2	11172.2	17.50
1997	47.5	14748.3	26.00
1998	66.3	22958.7	13.50
1999	180.4	45781.4	13.50
2000	285.8	71461.7	13.50
2001	281.9	91663.1	13.50
2002	262.6	71542.5	14.31
2003	300	63170.3	18.00
2004	472.3	80414.1	13.50
2005	662.5	122220.9	14.31
2006	764.9	139582.4	19.00
2007	1359.3	186718.7	15.75
2008	2112.5	296863.8	15.00
2009	2900.1	274520.6	13.00
2010	5121	304122.6	12.25
2011	13294.6	585279.7	8.75
2012	9562.99	605096.4	9.81
2013	7030.81	277098.6	7.44
2014	9918.2	297307.1	6.13
2015	9672.6	280723.8	9.19

Source: Statistical Bulletin of Central Bank of Nigeria (1996 – 2015)

Fact Book of Nigerian Stock Exchange (1996 – 2015)

Pattern of Growth in the Variables

Figure 4.1 Graphs of ASI, Intr, and MACAP



Source: E-View Output File

The above graph shows the pattern of growth in the respective variables. The value of ASI rose from its value of 11172.2 in 1996 and continued in its upward trend until year 2012 when it started falling. The decline in the value is as a result of the global financial crisis that started in the year 2011. Even though the value started rising in 2013, it soon declined again in 2014 as a result of internal crises that befell the market.

A high interest rate increased the cost of borrowing especially from the banks who also charges higher borrowing rates as a result of increase in interest. This can have effect on liquidity of the market as funds are not readily available and also discouraged investment in the directly productive sectors of the economy. As indicated in the above graph 1998 to 2012 witnessed a stable interest rate, however, thereafter there is no stability as up and down movement is witnessed. The lowest rate is recorded in the year 2014.

Market capitalization shows a persistent rise at increasing rate up to year 2011. However the development was thwarted as a result of the global financial crisis of the same period.

Table 4.3. Descriptive Statistics

	MACAP	ASI	INTR
Mean	3216.375	192122.3	13.69693
Median	713.7000	130901.7	13.50000
Maximum	13294.60	605096.4	26.00000
Minimum	31.20000	11172.20	6.130000
Std. Dev.	4262.510	173473.8	4.461426
Skewness	1.134842	1.125006	0.732468
Kurtosis	2.811259	3.540159	4.241362
Jarque-Bera	4.322573	4.461937	3.072512
Probability	0.115177	0.107424	0.215185
Sum	64327.50	3842447.	273.9386
Sum Sq. Dev.	3.45E+08	5.72E+11	378.1821
Observations	20	20	20

Source: Central Bank of Nigeria Statistical Bulletin 2015

Nigerian Stock Exchange Fact Book 2015.

For execution of the empirical design, the nature of data distribution is examined first by using standard descriptive statistics (mean, standard derivation, Skewness and Kurtosis).

The average value of all share index recorded in the period of the study is 192122.3. While the maximum reached are605096.4 whichwere recorded in the year 2008. The value of Kurtosis is 3.54 is above 3 which implies thatit is Leptokurtic with fat tail.The value of Jarque Bera for all share index is 4.46 with it probability value of 0.107. Theprobability value is greater than 5% meaning that the hypothesis of no normal distribution in the data is rejected.

The minimum value of interest rate is 6.13 which are reached in year 2014, a maximum value of 26.00 in the year 1997. The variableis also leptokurtic as shown by kurtosis value of 4.24. However the variable is normally distributed as the probability value of 0.21 is greater than 5%.

The highest value of market capitalization is 13294.6, the maximum value is 31200. The variable is mesokurtic as indicated by the Kurtosis of 2.81. The value of Jarque-Bera I 4.32 and a probability value are 0.115. Therefore, the variable is normally distributed.

Test of Stationary Properties Of Data

The stationary properties of the time series for the periods 1996 – 2015 on annual basis was examined using Augmented Dickey –Fuller (ADF) test statistic. The result of the tests is presented below:

Table 4.4 Unit Root Test of Interest Rate

Null Hypothesis: D(INTR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.785048	0.0000
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 18

Source: Compiled from E-View 7.0

At first difference the variable is stationary as indicated by the absolute value of Augmented Dickey – Fuller test statistic of 7.78 which is higher than the 5% value of 3.04. This test can also be confirmed by the probability value of 0.000 which less than 5%. Thus, the null hypothesis that interest rate has a unit root is rejected.

Table 4.5 Unit Root Test of Market Capitalization

Null Hypothesis: D(MACAP) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.225387	0.0401
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 14

Source: Compiled from E-View 7.0

From theresult above it shows that the variable is not stationary at a level. However, after the first difference the variable becomes stationary. This is becausethe absolute value of the Augmented Dickey – Fuller (ADF) is 3.23 which are greater than the 5% test value of 3.09. Furthermore, this test can be confirmed by the probability value of 0.04 which is less than 5%. Thus, the hypothesis that stock market capitalization has a unit root is rejected.

Table 4.6 Unit Root Test of All Share Index

Null Hypothesis: ASI has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.510759	0.0032
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 16

Source: Compiled from E-View 7.0

Among all the variables only ASI is stationary at level. It Absolute Augmented Dickey – Fuller (ADF) test statistic is 4.5 which is higher than the 5% value of 3.06. Also, the probability value of 0.0032 is less than 5%. Thus the null hypothesis that all share index has a unit root is also rejected.

Impact of Interest Rate on Market Capitalisation Table 4.7

Dependent Variable: D(MACAP)
Method: Least Squares
Date: 07/03/13 Time: 14:39
Sample: 1992 2011
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12654.08	2235.414	5.660734	0.0000
D(INTR)	-636.2644	169.5864	-3.751859	0.0016

R-squared	0.550323	Mean dependent var	3216.375
Adjusted R-squared	0.497420	S.D. dependent var	4262.510
S.E. of regression	3021.817	Akaike info criterion	19.00259
Sum squared resid	1.55E+08	Schwarz criterion	19.15195
Log likelihood	-187.0259	Hannan-Quinn criter.	19.03174
F-statistic	10.40245	Durbin-Watson stat	1.236145
Prob(F-statistic)	0.001121		

Source: Compiled from E-View 7.0

The result, as indicated by the table above shows that the value of R-Square is 55%, meaning that interest rate could only explained 55%. The remaining 45% could be due to other variable that could explain the development in capitalization that was not included. The result shows that when interest rates are zero, market capitalization increases by 12654.08.

It further shows that, a unit increase in the value of interest rate causes a decline of 636.26 with statistic significance. From the foregoing, it means that the relationship between interest rate and the stock market is significant.

The negative correlation between dependent and independent variables means as interest rate increases, stock market capitalization decreases. While a decrease in interest rate would result in increase in stock market capitalization.

The Durbin-Watson statistic shows a value of 1.23 which indicates absence of autocorrelation. The F-Statistic value is 10.40 with its corresponding probability value of 0.0012 which is less than 5%. The probability value of 0.0012 (0.12%) confirmed that the interest rate contribute significantly to changes in stock market capitalization. Based on this, the null hypothesis, stating that interest rate has no significant impacts on stock market capitalization is rejected.

Relationship Between Interest Rate, and All Share Index

Dependent Variable: ASI
Method: Least Squares
Date: 07/03/13 Time: 14:38
Sample: 1992 2011
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	512888.8	99391.76	5.160275	0.0001
D(INTR)	-19054.19	7540.213	-2.527009	0.0217

R-squared	0.463278	Mean dependent var	192122.3
Adjusted R-squared	0.400135	S.D. dependent var	173473.8
S.E. of regression	134357.1	Akaike info criterion	26.59187
Sum squared resid	3.07E+11	Schwarz criterion	26.74123
Log likelihood	-262.9187	Hannan-Quinn criter.	26.62103
F-statistic	7.336890	Durbin-Watson stat	1.072215
Prob(F-statistic)	0.005045		

Source: Compiled from E-View 7.0

The result as indicated by the table above shows that the value of R-squared is 46% meaning that interest rate could only explained 46%. The remaining 54% could be explained by the residuals and other explainers of growth in ASI that were not included.

When interest rate decreases all share index by 19054.19 with statistic significance. From the above, it means that the relationship between all share index and interest rate is significant.

The Durbin-Watson statistics showa value of 1.07 which also indicates absence of autocorrelation. That is, auto correlation is not present in the variant. The null hypothesis is rejected based on the probability of F-Statistic which is 0.005 that is less than 5%. Therefore, there is a significant relationship between interest rates on all share index (ASI).

Discussion of Findings

Emergent from the foregoing analysis, it found that all the variables through the Augmented Dickey-Fuller (ADF) test are stationary. The regression result for the period under review showed that interest rates has negative influences on stock market capitalization and all share index of the Nigerian Stock Exchange vi's-à-vis stock market performance. This is due to the fact that an increase in interest rate has the ability of squeezing fund out of the market. When interest rate increases, investors will move their money from the capital market to the money market. During the increase in interest rates, stock prices move downward due to movement of money to the money market. The findings of this result is in line with the findings of Degregorio (1992), Mueller (1996), Little (1999), Wagner (2007) and Pento (2008), although these studies are not based on Nigerian data. However, the findings of this study is contrary to the findings of Ologunde et al (2006), their study used Nigeria data from 1981 – 2000 and found out that the relationship between stock market capitalization and interest rate is not significant. This contradiction may be as a result of changes or improvements that have been taken place within the Nigerian financial market from 2000 – 2011. These changes should be in the area of awareness and confidence of investors on the market. Other factors responsible for this contradiction may be the pension reform, consolidation exercise of banks in 2004 and 2005 respectively.

Summary

In summary, the study found out that there is a negative and significant correlation between stock market capitalization, all share index and interest rates. The study found that the variation in stock market capitalization, all share data, indexes is accountable to interest.

The study therefore concludes that a change in interest rate would result in a negative and significant impact on stock market capitalization. The study also concludes that a change in interest would result in negative and significant impact on all share index.

Conclusions and Recommendations

Conclusion

The study therefore concludes with high interest rates, investors would patronize the money market more than the capital market and this would bring about a reduction in stock market capitalization and all share index which would in turn exert negative influences on the performance of the stock market.

From the findings of this study, we can conclude that the policy makers in Nigeria can use interest rates as a means of boosting the performance of the stock exchange. But, for this to be more effective an aggressive public enlightenment campaign especially in the rural areas could be embarked upon in order to create awareness about investing

in the stock market. This enlightenment should be supported by the opening of more branches of NSE in at least every state of the federation. In addition the regulators should carry out reforms that would boost the confidence of the investors. This could be in ensuring prompt delivery and verification of share certificate or even electronically crediting an investor's CSCS account. This could be supported by electronic dividend payment in order to reduce the delay in receiving dividends.

The findings of the study also showed a negative correlation between all share index and interest rate in Nigeria, the analysis of the result showed that the correlation between the two variables is significant.

Recommendations

From the literatures reviewed in the course of this research, one can say that in all stages of economic growth, greater reliance has been placed on the financial market as a vehicle to achieve such objective. Therefore, the following recommendations can assist policy makers in their continuous effort of formulating policies that would ensure economic growth and development.

I. The CBN should continue to exercise control in the administration of interest rate through the fixing of the monetary policy rate because of its significant correlation with the stock market performance so as to effectively use the capital market as a tool for enhancing economic growth and development. In doing this, the CBN should ensure that the interest rate is kept moderate; this would result in more patronage of the capital market. This would enhance the performance of the stock market, which would in turn enhance economic growth and development.

ii. An enlightenment campaign should be carried far and wide to arouse the interest of potential investing public especially those who reside outside the major cities and who wish to avail themselves of the opportunities of investing in the companies quoted on the NSE. This would create more awareness about investing in the capital market thereby bringing more investors to the market.

iii. The NSE should expand its branch networks to cover at least all states of the Federation. This would bring the stock market closer to more investors.

iv. The regulators in the stock exchange should ensure prompt delivery of and verification of share certificates to prospective investors.

v. The regulators in the stock exchange should make electronic dividend payment mandatory for all companies quoted on the exchange in order to reduce the delay associated with the receipt of dividends.

vi. It is recommended that the primary market on the stock exchange should find a means of relaxing some of the listing requirements to both the first tier and second tier securities markets in order to encourage more companies to use the stock market as an avenue for sourcing funds.

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