Monetary Policy and Stock Market Performance: Evidence from Nigeria Stock Exchange Market

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Abstract: - There have been controversies among scholars, researchers and finance professionals with regards to what triggers the movement in the stock prices from their fundamental value and it has generated questions that led to efforts to find out if monetary policy instruments affect stock market performance in Nigeria. Is it against this backdrop, that this study investigated the effect of monetary policy on stock market performance in Nigeria for the period 1981-2018. The specified model of the study was estimated using the ARDL model to determine the level of impact that one variable has on the other. While E-views 10 statistical software was employed in computing the result, time series data were obtained from World Bank national accounts data and OECD National Accounts data files and the study established that Lending interest rate had a positive relationship with all share index and also was statistically significant in the current year while Money supply had a negative relationship with ASI in the current year and in the previous lags i.e 1st, 2nd and 3rd years lag periods in the short run period but was found to have a positive relationship with All Share Index in the long run and was statistically significant at 5% level of significance, Consumer Price Index (CNPI) had a negative relationship with LASI in the current and in the 1st years lag periods and finally, Treasury Bill Rate (TRBR) had a negative relationship and significant impact on ASI in the current year period but was also found to have a positive and strong impact on ASI in the 1st lag period, based on this, the study recommended that Central bankers and stock market participants should be aware of the relationship between monetary policy and stock market performance in order to better understand the effects of policy shifts. Monetary authorities in particular face the dilemma of whether to react to stock price movements, above and beyond the standard response to inflation and output developments.

Keywords: Monetary Policy, All Share Index, Money Supply, Lending Interest Rate.

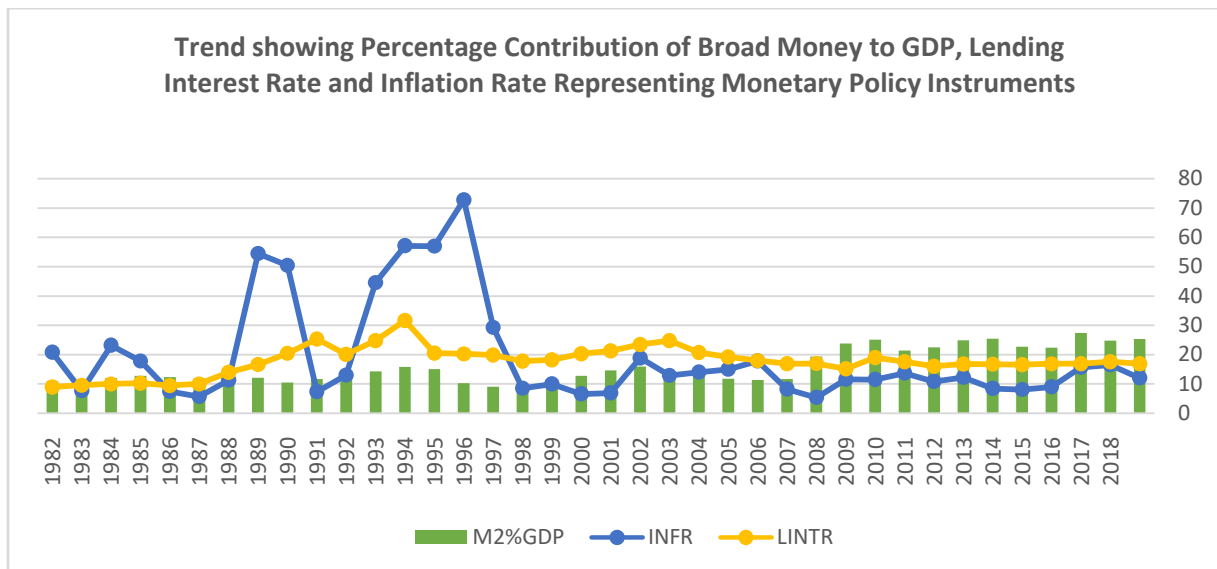## I. BACKGROUND TO THE STUDY AND STATEMENT OF THE PROBLEM

Monetary policy according to Anyanwu (2013) involves a deliberate effort by the monetary authorities to control the money supply and credit conditions for the purpose of the achieving a certain broad economic objectives. It can also be describes as the art of controlling the direction and movement of credit facilities for the pursuance of stable price and economic growth in an economy (Chowdhury, Hoffman and Schubert, 2003). But differently monetary policy refer to as the action of central bank to regulate the money supply which could be through discretionary monetary policy instruments such as open market operation (OMO), discount rate, reserve requirements, moral suasion, direct control of banking system credit and direct regulation of interest rate (Loayza and Schmidt-Hebbel, 2002).

Monetary authorities however, use different instruments to effect policies on the various transmission channels. A monetary policy that is aimed at interest rate control may be either direct or indirect. When it is direct, it is specifically applied to the portfolio or balance sheet of banks in the financial system using selective credit control, stabilization securities, and administered interest rates etc. An indirect monetary policy regime uses market determined instruments such as open market operations, variable rediscount rate and reserve requirements. A monetary policy framework that has its target at either the consumer price index or producer price index is aimed at inflation. On the other hand, the credit channel of transmission is directed at credit availability through debt or equity market. The credit channel is merely an amplifying mechanism and not independent of the interest rate channel (Bernanke and Gertler, 2005).

Nonetheless, in Nigeria, monetary policy has been known to be transmitted through the liquidity channel, credit channel and exchange rate channel (Uchendu 2016). Uchendu (2016), observed that when direct controls were relaxed as part of the Structural Adjustment Program (SAP) of 1986, the inter-bank market rates became a source of monetary policy transmission in Nigeria. He further observed that credit availability also influenced the lending behavior of credit market during the period. A major shift in monetary policy formulation in Nigeria came on the heels of SAP as a measure to liberalize the financial system and subsequent opening up of the capital market to foreign participation.

Fig. One

Trend showing Percentage Contribution of Broad Money to GDP, Lending Interest Rate and Inflation Rate Representing Monetary Policy Instruments

Source: Researcher's Compilation from World Bank Data Files

The primary objective of Monetary Policy formulation in any economy is to ensure price stability and adequate employment which in turn will create a stable macroeconomic environment for economic prosperity and this can only be achieved if monetary policy is properly transmitted into the macro-economy through the various channels notably interest rate channel, credit channel and the price level. Okafor (2017), opines that an effective transmission mechanism will be one that will increase the return on investment. For instance, taking a close look at the fig one above, it can be seen that broad money supply (M2) and lending interest rate has always been moving in the same direction simultaneously where the only notable difference was in 1991 and 1994 where M2 was 11.6% and 16% while lending interest rate was between 25 and 31% in nominal terms respectively. Based on this observation, it can be seen that inflation rate has always been a problem to economic prosperity due to persistent increase every single year which goes a long way affecting investor's decisions in trading in the stock market. For instance, from 1982, inflation rate was 20% and rose to its peak in 1996 with the value of 72% and in turn discouraging investors heavily. By manipulating monetary policy instruments such as discount rate, market capitalization of open market operation, stock exchange market, stock market credit and exchange rate, central banks affect the rate of growth of the money supply, the level of interest rate, security prices, credit availability and liquidity creation from the hand of financial institutions. These factors, in turn can exert monetary imbalances or shocks on the economy by influencing the level of investment, consumption, imports, exports, government spending, total output, income and price level in the economy (Mishra and Pradhan, 2008).The Investors can only benefit from returns on investment if earnings per stock are increasing adequately. Hence, the understanding of how policy actions affects the macro-economy deeply entails knowing how policy actions will affect key financial markets, as well as how changes in asset prices and returns in these markets affect the behavior of households, firms and other stakeholders. Okpara (2010), stated that several factors have been identified in studies as affecting the demand and/or supply of stocks, which include company fundamentals such as a change in the board of directors, appointment of new management, creation of new assets, dividends, earnings and external factors such as government rules and regulations, inflation, and other economic conditions, investor behavior, market conditions, money supply, competition, uncontrolled natural or environmental circumstances directly affecting the production of the company. The stock market performance is supposed to illustrate the state of the country's economy: if stock prices start to fall, economic depression is likely to take place and, conversely, rising stock prices show possible economic growth. Considering the state of the world financial system which is getting more and more complicated, it is important to find out the extent to which monetary policies can influence the direction of stock market performances in Nigeria.

Over the years, the Nigerian Stock Market like several other markets across the continents have experienced massive fluctuations in its market index and this has been attributed to many factors including investment into and divestment from it (Sundayson, David & Hemen 2013). Starting from the early/mid 2000, the stock market witnessed steady growth in its volume of trade, value of stocks traded as well as the All Share Index before the crash of the market in 2008 as can be seen below in fig two.

Trend of All Share Index of the Nigerian Stock Market and Stocks Traded Value Added to GDP for the period 2004-2018
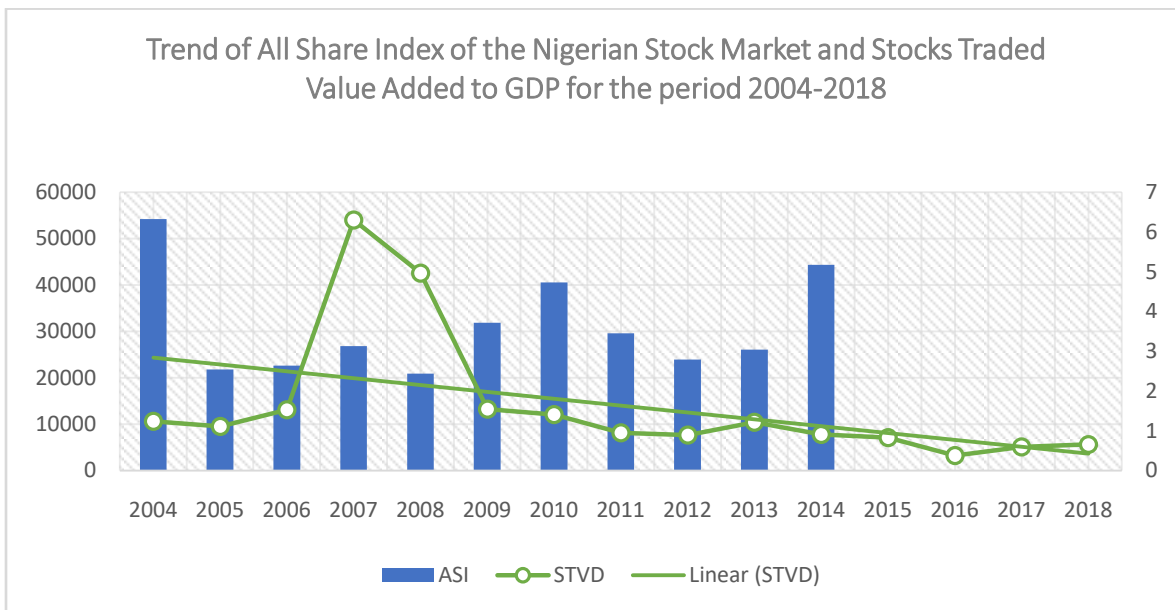
Source: Researcher's Compilation from World Bank data files

This is especially noticeable beginning with the bank consolidation policy in 2004 and the insurance sector recapitalization mandate in 2005, where for the first time since the inception of the Nigerian stock market, the capitalization hit the N2 trillion marks.

Trend Showing Market Capitalization of Listed domestic Companies
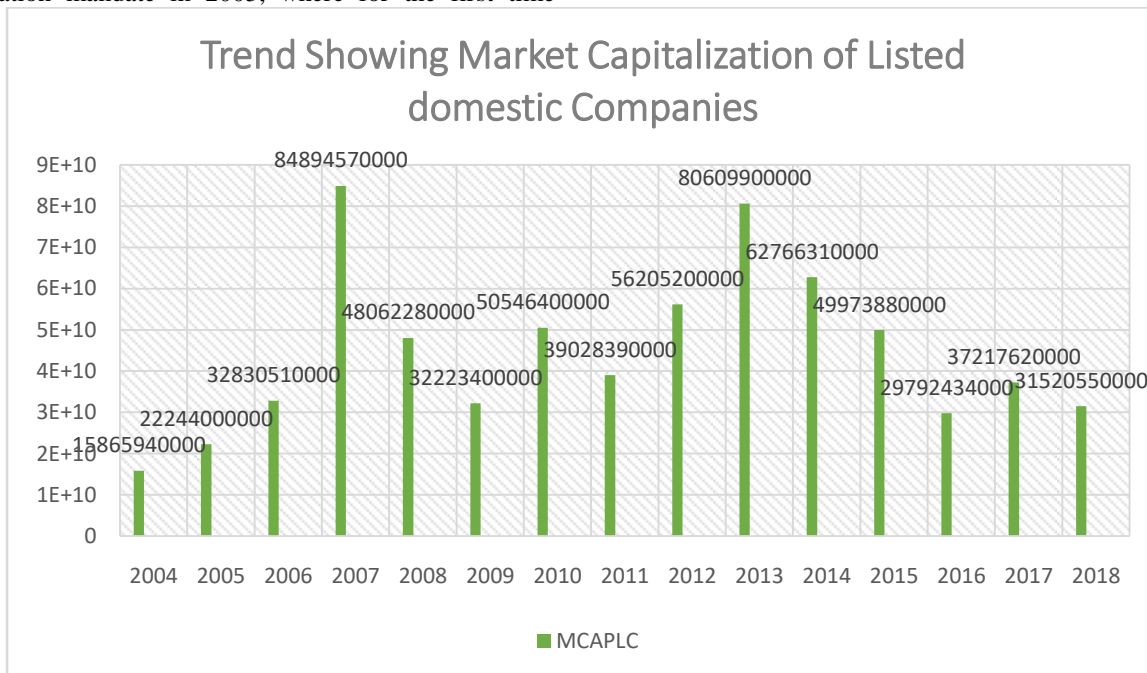
Source: Researcher's Compilation from World Bank data files

The market capitalization consistently enjoyed increases, reaching an all-time year-end high of about N84.8 trillion in 2007, but later crashed to about N48.06 trillion and further to N32.2.03 in 2009 respectively, while market closed at N50.5 trillion in 2010 (CBN, 2010). Despite the Nigeria Stock Market miniature stature when compared with its counterparts all over the world, the Nigerian stock market has proved to be one of the most efficient in terms of profitability.

It consistently posted high returns some few years before it crashed, especially in 2007, in which it posted year-end returns of 74.8% on all investments (Meristem, 2008). It was also reported that the boom in the NSE brought massive influx of both corporate and individual investors into the market. Thus, the number of the volume of shares traded continued to rise. But as is the case with every bubble, that of the Nigerian stock market burst in the second quarter of 2008 and this

saw the market capitalization crashing with general stock prices tumbling. Consequent upon the crash and the falling share prices, there was a drastic reduction in the volume of shares traded as well as in the number of deals in the Nigerian stock market which lead to so many unresolved economic problems as the stock prices of all the quoted companies on the Nigerian Stock Market were seriously affected by a number of factors. Some of these factors include company profits, political factors, interest rates, inflationary rate, Real Gross Domestic Product, and exchange rate (Corrado and Jordan, 2002). The Nigerian Stock Exchange Market has however undergone series of reforms to measure up with other emerging markets in the world thereby enhancing participation of foreign investors. This was done to promote the key sectors of the economy, make the market accessible for raising capital and attractive to both foreign and local investors. Yet those problems affecting the Stock Market Performance remained unresolved. For example, interest rate has remained extremely high with devastating impacts on the cost of borrowing and investment in Nigeria. This has been the bane of attracting foreign investments. The instability of exchange rate leads to speculation in foreign exchange market; disrupt international credit operations and the stock market operations, while money supply has to be supported with growth in output of goods and services in other not to draw stock prices downwards. Effects of inflation rate also leads to decline in stock prices and among others. However, the depressed stock prices have forced the local investors, who had never witnessed a market meltdown, to panic and sell off their shares which also caused the market capitalization to drop even further. Because as prices continued to fall, many investors in the market suffered losses and as a result, the once bubbling market now suffers low patronage as investors now seek alternative investment opportunities. The sensitiveness of the stock market to external shock resulting from the global financial meltdown has affected the performance of the macroeconomic fundamentals in the economy (Atje & Jovanovic, 2008). The question of whether or not stock prices can be predicted by macroeconomic indicators in an economy is of serious concern both to the academics as well as the practitioners all over the world. There have been controversies among scholars, researchers and finance professionals with regards to what triggers the movement in the stock prices from their fundamental value and it has generated questions that led to efforts to find out if monetary policy instruments affect stock market performance in Nigeria.

II. REVIEW OF RELATED LITERATURE

2.1 Monetary Policy

Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of Money in an economy. It can be described as the art of controlling the direction and movement of credit Facilities in pursuance of stable price and economic growth in an economy (Chowdhury, Hoffman and Schubert, 2013). Put differently,

monetary policy refers to the actions of the Central Bank to regulate the Money supply which could be through discretional monetary policy instruments such as the open market Operation (OMO), discount rate, reserve requirements, moral suasion, direct control of banking system Credit, and direct regulation of interest rate (Loayza, and Schmidt-Hebbel, 2002).

Monetary policy comprises the formulation and execution of policies by the central bank to achieve the desired objective or set of objectives; the policies and decisions are aimed at guiding bank lending rates to the Levels where credit demand and money growth are at a level consistent with aggregate supply elasticity (Loayza and Schmidt, et al). The objectives and goals that the central bank seeks to achieve generally are low inflation (usually targeted), protection of value of currency, full employment and sustainable economic output (economic growth). Monetary policy covers the monetary aspect of the general economic policy which requires a high level of co-ordination between monetary policy and other instruments of economic policy of the country. The effectiveness of monetary policy and its relative importance as a tool of economic stabilization varies from one economy to another, due to differences among economic structures, divergence in degrees of development in money and capital markets resulting in differing degree of economic progress, and differences in prevailing economic conditions (Faure, 2007).

2.2 Stock Market

The stock market, as perceived by Al-Faki (2006) is a network of specialized financial institutions, series of mechanisms, processes and infrastructure that in various ways, facilitate the bringing together of suppliers and users of medium to long term capital for investment in socio-economic developmental projects. The stock market is divided into the primary and the secondary market. The primary market or the new issues market provides the avenue through which government and corporate bodies raise fresh funds through the issuance of securities which is subscribed to the general public or a selected group of investors. It is a platform where companies or the government can raise money for investment or where already quoted companies can raise fresh funds for expansion. Both the Securities and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE) are involved in primary market activities. The secondary market provides an avenue for sale and purchase of existing securities. According to Pandey (2006), it is a type of market where existing securities of a market are traded on daily and continuous basis. It is the market for existing securities. This consists of exchanges and over-the counter markets where securities are bought and sold after their issuance in the primary market. The stock market is treated as part of securities market where trading in stock is organized and carried out (Ibrahim, 1999). It is the place where securities (shares) of listed companies are traded and where investments, both foreign and domestic, are made (Ullah, Hussain & Rauf,

2014). It is an organized market where brokers meet to buy and sell stocks and shares at an agreed price for long-term investments (Olokoyo & Ogunnaike, 2011). Thus, stock markets (or equity markets) like many other financial intermediaries, facilitates transfer of funds from surplus spenders (savers) to deficit spenders (investors). It mobilizes and channels idle funds and resources in the economy to most productive use, leading to efficient allocation of capital. In the past, debt was the preferable source of finance for industrial enterprises; however, today, equity and quasi-equities are attractive instruments of finance. A stable and well-regulated equity market is necessary to enhance activities among financial elements. If equity market is efficient, firms can easily raise funds by issuing securities (Rashid, 2008).

An efficient and well-functioning equity market may facilitate the economic growth and development process in an economy through the following means: (1) augmentation of household saving, (2) efficient allocation of investment resources, and (3) alluring foreign portfolio investment. The stock market encourages households to save and invest in financial instruments on one hand and, on the other hand, it provides easy financing to those firms who need long-term capital for investment projects. The stock market rallies both the players providing the facilities for trading of stocks. The stock market thus channels funds from savers to investors with higher efficiency. Similarly, a well-established equity market attracts foreign investors. Foreign portfolio investment inflows raise share prices up and reduce the cost of capital to corporations of the domestic country by lowering the price-earnings ratio.

2.3 Theoretical Literature

2.3.1 The Efficient Market Hypothesis

The efficient market hypothesis (EMH) was developed by Fama (1965). The assumption of full information is the crux of the EMH, an idea that presupposes that all the relevant information is fully reflected in the prices of stocks. It asserts that markets are —informationally efficient, and as such, no one can consistently achieve returns that is in excess of the average market returns. Fama (1970) revealed that there are three versions of the hypothesis namely; the weak, the semi-strong, and the strong forms. The weak-form claims that prices on traded assets (e.g., stocks and bonds) already reflect all past publicly available information. The semi-strong-form claims, simultaneously, that prices reflect all publicly available information and that prices instantly change to reflect new public information. Lastly, the strong-form additionally claims that prices instantly reflect even hidden or, —insider‖ information. In other words, the value of gain from information to an i th individual must be zero i.e. V (η i)- V (η o)= 0, implying that no one would pay anything for the information set of historical prices. In line with the above, Akintoye (2008) referred to the Nigerian stock exchange (NSE) as efficient in the weak form.

2.3.2 Modern Portfolio Theory (MPT)

The Modern Portfolio Theory (MPT) was introduced by Markowitz (1952). It is an investment strategy that seeks to construct an optimal portfolio by considering the relationship between risk and return. It is a mathematical formulation of the concept of diversification of investment, aiming at selecting a collection of investment assets that have collectively lower risk than any individual asset. The theory recommends that the risk of a particular stock should not be looked at on a standalone basis, but rather in relation to how a particular stock's price varies in relation to the variation in price of the market portfolio. When single period returns for the various securities are treated as random variables, it can be assigned expected values, standard deviations and correlations. These can be used to calculate expected returns and volatility of any portfolio so constructed with those securities.

2.3.3 Arbitrage Pricing Theory (APT)

The Arbitrage Pricing Theory (APT) model was developed by Ross (1976). It is a general theory of asset pricing that holds that the expected return of a financial asset can be modeled as a linear function of various macroeconomic factors or theoretical market indices, where sensitivity to changes to each factor is represented by a factor-specific beta coefficient. Thus, one way of linking macroeconomics variables and stock market returns is through the arbitrage pricing theory (APT) where multiple risk factors can explain asset returns. Early empirical papers on APT focused on individual security returns. It may also be used in an aggregate stock market framework, where a change in a given macroeconomic variable could be seen as reflecting a change in an underlying systemic risk factor influencing future returns.

2.2.4 Present Value Model (PVM)

An alternative, but not inconsistent approach is the discounted cash flow or present value model (PVM). This model relates the stock price to future expected cash flows and the discount rate of these cash flows. Again, all macroeconomic factors that influence future expected cash flow or the discount rate by which these cash flows are discounted should have an influence on the stock price. The advantage of the PVM model is that it can be used to focus on the long run relationship between the stock market and macroeconomic variables.

2.4. Empirical Literature

Echekoba, Ananwude and Lateef (2017) examined effect of monetary policy tools on performance of the Nigerian capital market. The monetary policy engaged are monetary policy rate, cash reserve ratio, liquidity ratio and loan to deposit ratio on the performance of the Nigerian capital market. The results of the analysis revealed that Nigerian capital market performance is not significantly affected by monetary policy announcement by the Central Bank of Nigeria instead

monetary policy rate that is significantly influenced by performance of the capital market.

Echekoba, Okaro, Ananwude and Akuesodo (2018) employed Ordinary Least Square (OLS) regression technique and causality analysis to investigate the effect of monetary policy on the performance of Nigerian capital market with time series data from 1986 to 2016. It was found that monetary policy rate negatively and significantly relate with capital market performance, whereas cash reserve ratio has positive and significant impact on performance of the capital market.

Nwokoye and Otu (2018) used Cointegration and vector error correction modelling (VECM) to examine if monetary authorities can stabilize the stock market and reduce its volatility culminating to examination of impact of monetary policy onthe development of the stock market in Nigeria. The results found as follows; the cointegration test showed that there exist long run relationships among the variables of the model. VECM saw that monetary policy, through the growth rate of money supply has impacted positively and significantly on the development of the stock market in Nigeria. Again, prime lending rate has a negative impact on the development of the stock market in Nigeria.

Osakwe and Chukwunulu (2019) used OLS regression technique to unravel if monetary policy (money supply, interest rate and exchange rate) influences stock market performance in Nigeria from 1986 to 2015. The results of the study indicated that money supply and exchange rate have positive and significant effect on stock market price movement whereas Interest rate has insignificant negative effect on stock market price movement.

III. METHODOLOGY

3.1. Theoretical Framework: The Arbitrage Pricing Theory (APT) & Present Value Model Theory (PVM)

The model specification of this study is anchored on the Arbitrage Pricing Theory and the present value Model Theory. The PVM can be used to focus on the long run relationship between the stock market and macroeconomic variables such money supply and lending interest rate while the APT focuses on the short-run relationship between the stock market movement and the macroeconomic fundamentals.

According to these models, any new information about the fundamental macroeconomic factors may influence the stock price/return through the impact on expected dividends, the discount rate or both (Chen et al., 1986; Rahman, Noor, Mohd & Fauziah, 2009).

3.2 Model Specification

Mathematically, the functional form of the research model is specified below as:

$$LASI\ (Y) = \alpha_0 + \alpha_1 M2 + \alpha_2 TRBR + \alpha_3 LINTR + \alpha_4 CNPI + \mu_1$$

The Auto regressive Distributed Lag (ARDL) and the Unrestricted Error Correction Model (UECM) specification is as follows:

$$\Delta ASI_t = c_0 + \delta_1 LASI_{t-1} + \delta_2 LM2_{t-1} + \delta_3 TRBR_{t-1} + \delta_4 LINTR_{t-1} + \delta_5 CNPI_{t-1} + \Sigma\phi i\Delta LASI_{t-i} + \Sigma\phi_j\Delta M2_{t-j} + \Sigma\phi_k\Delta TRBR_{t-k} + \Sigma\phi_j\Delta LINTR_{t-l} + \Sigma\phi_j\Delta CNPI_{t-m} + Ut \qquad ......(i)$$

Where:

LASI = Log of All Share Index Nigeria Stock Exchange, LM2 = Log of Broad Money Supply, TRBR = Treasury Bill Rate, LINTR = Lending Interest Rate and CNPI = Consumer Price Index, Ut = White noise assumed to be normally distributed. t = lag order selected by Akaike's Information Criterion (AIC).

IV. DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1. Pre-Estimation Test

4.1.1 Descriptive statistics

Preliminary analysis was conducted with the aim to determine the normality of the data, measures of central tendency and measures of dispersion. The mean and median are measures of central tendency and they indicate the average value of the sample. Standard deviation is the positive square root of variance. It is a measure of dispersion, that is, it shows the extent of the deviation from the mean. The null hypothesis of the Jarque-Bera test says that the distribution is a normal one. Therefore if the probability is less than 0.05, we reject the null.

Table 4.1

	LASI	LINTR	LM2	CNPI	TRBR
Mean	3.725805	18.70920	12.07643	62.70101	13.70118
Median	3.985773	17.87167	12.15451	37.79266	13.14500
Maximum	4.733919	31.65000	13.48263	240.1429	26.90000
Minimum	2.046495	9.433333	10.36461	0.829428	4.500000
Std. Dev.	0.853870	4.171212	1.032164	66.29622	4.688711
Skewness	-0.736943	0.568649	-0.204201	1.118628	0.309234
Kurtosis	2.121790	4.881649	1.731147	3.327413	3.417173

Jarque-Bera	4.170087	6.848239	2.517105	7.242729	0.788427
Probability	0.124302	0.032578	0.284065	0.026746	0.674210
Sum	126.6774	636.1127	410.5987	2131.834	465.8400
Sum Sq. Dev.	24.06013	574.1673	35.15697	145041.2	725.4724
Observations	34	34	34	34	34

Source: Researcher's Extract from Eviews 10 Output

From table 4.1 it could be seen that almost all the variables i.e LASI, LM2, TRBR has p-values greater than 0.05 signifying that they are normally distributed except LINTR, CNPI which are not normally distributed since their Jarque Bera prob. Value being < 0.05 level of significance but based on the law of large numbers i.e central tendency since we have 34 years observations, we can proceed with other regression estimates.

4.1.2 Unit Root Test

In order to verify the reliability of the time series data used for this analysis, a unit root test will be conducted on the selected time series data to determine whether they are stationary or non-stationary in level form. The unit root test that will be employed in this task is the Augmented Dickey Fuller unit root test. The result of the ADF Test is presented below:

Table 4.2 SUMMARY OF STATIONARITY TEST

VARAIBLE	ADF stat. (LEVELS)	5% critical value	ADF.stat. FIRST DIFFERENCE	5% critical value	REMARK
LASI	1.156966	-2.945842	-5.384634*	-2.948404	@I(1)
M2	1.155131	-1.952066	-3.169360*	-1.950687	@I(1)
LINTR	1.248448	-1.950394	-5.020427*	-1.950687	@I(1)
CNPI	-2.996907	-1.951000	-7.334882*	-1.950687	@I(1)
TRBR	-2.996907	-2.943427*			@I(0)

Source: Researcher's Compilation from Eviews 10 Regression Output (2019).

The aesteriks(*) sign is used to indicate stationarity at the 5% significance level

The application of unit root tests in autoregressive distributed lag (ARDL) technique is necessary in order to ensure that the variables are integrated of order one and none of the variables is integrated of order 2 because the computed F-statistic provided by Pesaran & Shin (2001) are valid for only variables that are I(0) or I(1) and a combination of both. The outcome of the unit root test in Table 4.2 above indicated that the LASI, CPNI, M2 and LINTR were integrated of order I(1) while only Treasury Bill Rate (TRBR) was integrated of order zero. Therefore, the variables under study are of mixed integration order and this justified the use of ARDL bounds test approach to co-integration over other conventional approaches that require the variables to be integrated of the same order.

4.1.3 Selection of Lag Length Criteria

VAR Lag Order Selection Criteria

Endogenous variables: LASI LINTR LM2 TRBR CNPI					
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-319.3590	NA	1693.700	21.62393	21.85747	21.69864
1	-144.4284	279.8889	0.079381	11.62856	13.02976*	12.07682
2	-117.0138	34.72528	0.078646	11.46758	14.03645	12.28938
3	-76.03060	38.25095*	0.041888	10.40204	14.13857	11.59739
4	-20.83544	33.11709	0.016126*	8.389030*	13.29322	9.957922*

Source: Researcher's Extract from Eviews 10 Output

Using the Vector Autoregressive Lag Length Criteria, it enables us to determine the appropriate lag periods in evaluating and estimating the required test for our model. Observing the lag length criteria above, it is obvious that the

dominating and appropriate lag for the model is lag period 4. The study will make use of the AIC i.e Akaike Information

Criterion for estimation.

4.1.4 Cointegration Test

Autoregressive Distributed Lag Bounds Test for Co-Integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	9.369749	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Researcher's Compilation from Eviews 10. (See Appendix)

From the ARDL Bounds Test and going by the decision rule of the Bounds Test, we cannot accept the null hypothesis of no cointegration since the F-Bounds Statistic of 9.369749 is greater than the I (0) and I (1) bounds at 10%, 5% and 1% respectively, therefore we conclude that there exists a long run relationship among the variables.

4.2 Dynamic Short Run ARDL Error Correction Model and Discussion

The Distributive lag and Short Run Estimates of the Model is summarized below

Table 4.3

ARDL ECM Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.614175	0.628403	-8.934031	0.0003
D(LASI(-1))	-0.237536	0.098534	-2.410716	0.0608
D(LASI(-2))	-0.424335	0.092750	-4.575034	0.0060
D(LASI(-3))	0.367745	0.093119	3.949181	0.0109
D(LINTR)	0.034861	0.008217	4.242424	0.0082
D(LINTR(-1))	-0.064938	0.009718	-6.682377	0.0011
D(LINTR(-2))	-0.031592	0.006842	-4.617240	0.0057
D(LINTR(-3))	0.013964	0.006436	2.169567	0.0822
D(LM2)	-1.649278	0.298528	-5.524699	0.0027
D(LM2(-1))	-0.303289	0.344724	-0.879801	0.4192
D(LM2(-2))	-0.207206	0.402163	-0.515228	0.6284
D(LM2(-3))	-3.220012	0.512844	-6.278737	0.0015
D(CNPI)	-0.005786	0.004203	-1.376698	0.2271
D(CNPI(-1))	-0.025299	0.007442	-3.399240	0.0193
D(CNPI(-2))	0.038895	0.006549	5.939429	0.0019
D(CNPI(-3))	0.031848	0.007290	4.368745	0.0072
D(TRBR)	-0.030135	0.004861	-6.198803	0.0016
D(TRBR(-1))	0.015584	0.004668	3.338604	0.0206
D(TRBR(-2))	-0.005113	0.003877	-1.318847	0.2444
D(TRBR(-3))	-0.017953	0.004383	-4.095762	0.0094
CointEq(-1)*	-0.892081	0.097145	-9.183014	0.0003
R-squared	0.966133	Mean dependent var		0.078875
Adjusted R-squared	0.890873	S.D. dependent var		0.144952
F-statistic	12.83722	Durbin-Watson stat		3.073096
Prob(F-statistic)	0.000229			

Source: Researcher's Compilation from Eviews 10. (See Appendix)

4.3 Static Long Run Estimates of Monetary Policy on Stock Market Performance in Nigeria

Table 4.4   ARDL Long Run Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LINTR	0.164937	0.051785	3.185058	0.0244
LM2	0.713186	0.248460	2.870428	0.0350
CNPI	-0.001520	0.006936	-0.219103	0.8352
TRBR	-0.082250	0.030130	-2.729830	0.0413

Source: Researcher's Compilation from Eviews 10. (See Appendix)

4.5 Discussion of findings for ARDL Short Run Dynamic Model and Long Run Static Model

Based on the outcome of the ARDL regression estimates, the focus of the study was to determine the effect of monetary policy on stock market performance in Nigeria. For the period under review, the following findings were uncovered as follows:

Lending interest rate had a positive relationship with all share index and also was statistically significant in the current year even though was found to have a negative relationship with ASI in the 1st and 2nd years previous lags and was found to be a strong contributor to stock market performance in the long run. This finding is not surprising since interest rate can be used as an automatic stabilizer where it can be used by the monetary authorities to increase the level of economic activities hence, aggregate investment through making more funds available to potential investors in the country by reducing the rate of interest.

Money supply is found to have a negative relationship with ASI in the current year and in the previous lags i.e 1st, 2nd and 3rd years lag periods in the short run period but was found to have a positive relationship with All Share Index in the long run and was statistically significant at 5% level of significance. Increase in economic activities in any economy aids growth of that economy while keeping an eye on inflation. Increase in money supply affects vitally the rate of economic growth. In fact, it is now regarded as a legitimate instrument of economic growth. Kept within proper limits it can accelerate economic growth but exceeding of the limits will retard it. Thus, management of money supply is essential in the interest of steady economic growth

Consumer Price Index (CNPI) had a negative relationship with LASI in the current and in the 1st years lag periods and this negative impact was statistically significant at 5% level of significance. On the other hand, CNPI was found to have a positive relationship with ASI in the 2nd and 3rd year previous years lags and was statistically significant at 5% level of significance and also showed to be a weak contributor to stock market performance in the long run for the period under review. Inflation being a domestic phenomenon exists and does not cause much distortion in the economy if well managed. In fact, a good amount of inflation is required for an economy to estimate investment expenditure, but its transmission mechanism is through financial intermediaries and in turn affects interest rate which crowds-out investment and in turn, affects output in the long-run.

Treasury Bill Rate (TRBR) had a negative relationship and significant impact on ASI in the current year period but was also found to have a positive and strong impact on ASI in the 1st lag period even though was once again showed to have a negative relationship with ASI in the 2nd and 3rd years previous lags and also statistically insignificant to its contribution to all share index in the long run .

The Error correction mechanism met the required conditions. The significance and rule of ECM holds that negative and statistical significant error correction coefficients are necessary conditions for any disequilibrium to be corrected. In light of this, the coefficient of CointEq(-1) is -0.892081. The above result shows that the ECM (-1) value is -0.89% implying that there is convergence of the equilibrium should there be system disequilibrium. The negative sign of the coefficient satisfied one condition while the fact that its P-value [0.0003] is less than 5% [0.05] level of significance satisfied the second condition of statistical significance. The coefficient indicates that the speed of adjustment between the short run dynamics and the long run equilibrium is 89%. Thus, ECM will adequately act to correct any deviations of the short run dynamics to its long-run equilibrium by 89% annually. This means that if All Share Index (LASI) is at disequilibrium, it converges back to equilibrium at an average speed of about 89% (0.892081x 100) every year in Nigeria. We can also say that about 89% of disequilibrium from shocks of previous years in All Share Index converges back to long run equilibrium every year in Nigeria. Hence, the whole system will get back to equilibrium, long run equilibrium at the speed of about 89% yearly.

R-squared of 0.966133 indicated that 96% of the total variation in stock market performance as captured by All Share Index (LASI), is accounted for by Lending Interest Rate (LINTR), Broad Money Supply (M2), Treasury Bill Rate (TRBR), Consumer Price Index (CNPI). However, the total variation of 4% in the dependent variable is attributable to the influence of other factors not included in the regression model.

4.4 Diagnostic Test/Post Estimation Test

4.4.1Test for autocorrelation

Durbin Watson (DW) = 3.073096

Decision: Since the value of Durbin Watson = 3.073096and clearly above to 2, we therefore conclude and accept H_0 that there is no autocorrelation present in the Model

4.4.2 Heteroscedasticity Test

Heteroscedasticity is the violation of the ordinary least square. Regression assumption states that the variance of the Error terms are homoscedastic that is, the error terms have a constant variance. Simply put, heteroskedasticity occurs when the variance of the error terms are not constant for all values of X.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.269352	Prob. F(24,5)	0.0955
Obs*R-squared	28.20283	Prob. Chi-Square(24)	0.2516
Scaled explained SS	0.856360	Prob. Chi-Square(24)	1.0000

Considering the Heteroscedasticity table above, we cannot reject the null hypothesis since the Prob Value is 0.2516> 0.05 level of Significance indicating no presence of Heteroscedasticity in the model.

4.4.3 Stability Test

The cusum and cusum of squares for model stability was employed to check for the stability of the parameters in the model. The result of the stability test is shown below:
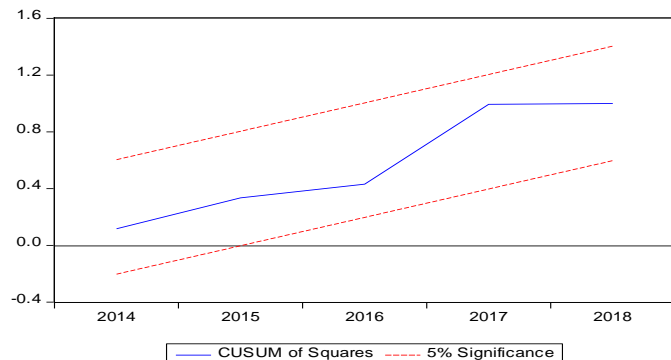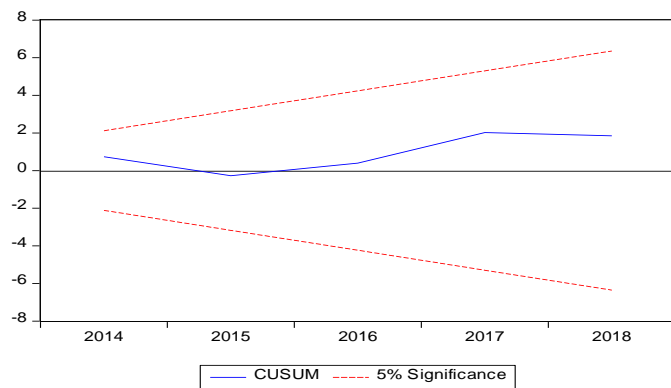
The cusum and cusum squares diagrams shows that the model is stable as the cusum line lies in between the 5% boundary

4.4.4 Pairwise Granger Causality Test for Objective Five

To answer the question of the objective six in this study, we employ the Pairwise Granger Causality Test below:

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
LINTR does not Granger Cause LASI	32	1.86347	0.1745
LASI does not Granger Cause LINTR		2.54460	0.0972
LM2 does not Granger Cause LASI	32	0.55595	0.5800
LASI does not Granger Cause LM2		1.15185	0.3311

Source: Extract from Eviews 10 Output (See Appendix)

Since our focus is on ascertaining the direction of causality between monetary policy and stock market performance, we can conclude that monetary policy does not granger cause stock market performance since the probability values of LINTR and LM2 i.e 0.1745 and 0.5800 respectively are > 0.05 level of significance while on the other hand, stock market performance does not granger cause monetary policy since the prob value of LASI is 0.0972 and 0.3311 respectively are > 0.05. So, it is concluded that the direction of causality between monetary policy and stock market performance is Non-directional causality.

V. SUMMARY OF FINDINGS, CONCLUSION & RECOMMENDATIONS

5.1 Summary of Findings

The study investigated the effect of monetary policy on stock market performance in Nigeria for the period 1981-2018 with specific objectives namely; to examine the impact of broad money supply on stock market performance in Nigeria, to evaluate the impact of treasury bill rate on stock market performance in Nigeria, to determine the impact of Lending Interest rate on stock market performance in Nigeria, to ascertain the impact of consumer price index on stock market performance in Nigeria and to examine the direction of causality between monetary policy rate and All share index in Nigeria. The specified model was estimated using the Autoregressive Distributive lag Model to determine the level of impact that one variable has on the other. While E-views 10 statistical software was employed in computing the result, time series data were obtained from World Bank national accounts data and OECD National Accounts data files and the study establishes as follows:

- Lending interest rate had a positive relationship with all share index and also was statistically significant

in the current year even though was seen to have a negative relationship with ASI in the 1st and 2nd years previous lags and was found to be strong contributor to stock market performance in the long run.

- Money supply is found to have a negative relationship with ASI in the current year and in the previous lags i.e 1st, 2nd and 3rd years lag periods in the short run period but was found to have a positive relationship with All Share Index in the long run and was statistically significant at 5% level of significance.

- Consumer Price Index (CNPI) had a negative relationship with LASI in the current and in the 1st years lag periods and this negative impact was statistically significant at 5% level of significance. On the other hand, CNPI was found to have a positive relationship with ASI in the 2nd and 3rd year previous years lags and was statistically significant at 5% level of significance and also showed to be a weak contributor to stock market performance in the long run for the period under review.

- Treasury Bill Rate (TRBR) had a negative relationship and significant impact on ASI in the current year period but was also found to have a positive and strong impact on ASI in the 1st lag period even though was once again showed to have a negative relationship with ASI in the 2nd and 3rd years previous lags and also statistically insignificant to its contribution to all share index in the long run.

5.2 Conclusion

This study used the ARDL model to investigate the effect of monetary policy on stock market performance in Nigeria for the period 1981-2018. From our findings, lending interest rate and broad money supply contributes more significantly to All Share Index than consumer price index and Treasury bill rate to stock market performance in Nigeria.

The conclusion to be drawn from this study is that consumer price index and Treasury bill has an insignificant economic effect on the Stock Market performance in the presence of other internal and external macro-economic shocks. Nevertheless, to achieve a high and sustainable growth, we proffer some policy recommendation which when properly implemented will surely stimulate greater growth of output.

5.3 Policy Recommendation

- Understanding the monetary transmission mechanism is essential to policymakers because different mechanisms may imply that different targets are optimal or appropriate. The stock market channel, for example, suggests that the price level is the appropriate target of monetary policy; the money channel and the creditworthiness channels imply that the interest rate should be targeted; the bank-dependent borrower channel suggests the quantity of credit. Therefore, policymakers in various countries as a matter of necessity should fully understand the appropriate mechanism operational in their country and the channel through which monetary impulses affect stock market performance.

- Central bankers and stock market participants should be aware of the relationship between monetary policy and stock market performance in order to better understand the effects of policy shifts. Monetary authorities in particular face the dilemma of whether to react to stock price movements, above and beyond the standard response to inflation and output developments. There is an ongoing debate in the monetary policy rules literature between the proactive and reactive approach. On the one hand, the proactive view advocates that monetary policymakers should alter interest rates in response to developing stock price bubbles in order to reduce overall macroeconomic volatility.

- The stock market operates in a macroeconomic environment and thus its performance is very dependent on investors' confidence and the general perception of the health of the economy. Therefore, monetary policymakers need to make the environment enabling and free of fear in order to bring about development of the stock markets. They also need to take into account speculations going on in the economy and incorporate these speculations into their formulation framework.

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