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Impact of Monetary Policy Targets on Transaction Values of the Capital Market in Nigeria

[1]**Abdulkarim, Musa,** [2]**Uwaleke, Uche &** [3]**Nwala, M. Nneka**
[1,2&3]*Department of Banking and Finance,*
Nasarawa State University

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Abstract

This study empirically examines the impact of monetary policy targets on transaction values of the capital market in Nigeria from 1986-2018. Time series data and econometric tools were used to test for the stationarity and causality effect. The Auto-Regressive Distributed Lag Model (ARDL) and Error Correction Model (ECM) techniques were used to examine the short-run and long-run impact and relationship between Monetary Policy and Transaction Values of Capital Market Nigeria. The short-run result revealed that the exchange rate and inflation rate in Nigeria were negatively related to transaction values of the capital market in Nigeria but statistically insignificant in explaining any variation in transaction values of the capital market in Nigeria. Also, though the interest rate in Nigeria was positively related to transaction values of the capital market Nigeria it was statistically insignificant in explaining any variation in transaction values of the capital market in Nigeria. While the supply of money was positively related to transaction values of the capital market in Nigeria and was statistically significant at a 5 percent level of significance. However, the long-run result revealed that the money supply and interest rate were positively related to transaction values of the capital market in Nigeria while the exchange rate and inflation rate in Nigeria were positively related to transaction values of the capital market in Nigeria but it was only exchange rate in Nigeria that was statistically significant to transaction values of the capital market in Nigeria. Therefore, the study recommends that Government should improve the efficiency and effectiveness of the money supply in Nigeria since it was statistically significant in determining the improvement of transaction values of the capital market in Nigeria.

Keywords: *Monetary Policy, Transaction, Value, Capital Market, Targets*

Corresponding Author: Abdulkarim, Musa

Background to the Study

In a developing economy, the role of the capital market in financial intermediation and mobilization of long-run financial resources is huge and undeniable. Also, the need for an effective and efficient capital market in emerging industrialized economies. However, volatility in stock prices can have significant implications on the performance of the financial sector as well as the entire economy (Afroze, 2013).Therefore, to mitigate the volatility in stock prices can affect the performance of the capital market and the performance of the entire economy, most nations use monetary policy as a measure to control any volatility in stock prices that can affect the performance of the capital market. Thus, with this scenario, the monetary authorities try to adjust monetary policy tools to suit the macroeconomic goal of the government and if possible, jettison any fundamental that may distort financial system stability, reliability especially capital market and economy in general.

Muktadir-Al-Mukit and Shafiullah (2012) further stressed that there exists a functional relationship between monetary policy and market index, so the Central Bank must determine the effect of monetary variables such as money supply, interest rate, and inflation rate on the performance of the capital market, and besides, a stock market is not always blessed with the upbeat condition. However, though the fact that the influence of monetary policy on capital market performance is of great significance to the monetary Authorities among Nations, individual and corporate investors need to know and identify the uncertainties that would attack the transaction values of the capital market propel by changes in monetary policy targets in the economy through the monitory of the financial Authorities.

Understanding the influence of variation in monetary policy targets would sharpen investors' intent in measuring the intrinsic value of stocks in the capital market. The evaluation of the intrinsic value of common stock with regards to prevailing market price envisages the over-pricing and underpricing linked with securities traded on capital markets. While earnestly acknowledging fundamentalist point of view, Ahmed and Igbinovia, (2015) assert that making profits from stock trading depends on an investor's ability to accurately calculate stock's intrinsic value which is done by examining the environment of the firm; related economic, financial and other qualitative and quantitative factors which can be caused by the variation of monetary policy. The nature of the relationship between monetary policy and capital market performance has made nations to engaging deliberate monetary policy targeting in which Nigeria as a nation is left out. Thus, several governments have engaged in various monetary policy regimes and use different instruments to affect policy 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 to mention but a few. 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 the debt or equity market. The credit channel is merely an amplifying mechanism and not independent of the interest rate channel (Oniore and Akatugbe, 2017).

Nonetheless, in Nigeria monetary policy has been known to be transmitted through the liquidity channel, credit channel, and exchange rate channel (Uchendu, 2006). In his study, Uchendu 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 the 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. More recently, the CBN generally implements its monetary policy programs using the market-based and rule-based techniques (Chuku, 2009). When implementing monetary policy using the rule-based technique, the CBN uses direct instruments like selective credit controls, direct regulation of interest rates, and moral suasion. While indirect instruments like the Open Market Operation (OMO), discount rate, and the reserve requirements are used when implementing monetary policy programs using the market-based approach.

However, Ologunde Elumilade and Asaolu (2006) posit that interest rates along with monetary aggregates form targets of monetary policy in Nigeria influence the activities of the capital market in developing countries like Nigeria. Using the direct monetary policy targets, the monetary authorities directly influence the activities of the capital market especially the transaction values of the market. As such it is important to know the impacts of such monetary policy targets like interest rate, exchange rate, money supply, and inflation rate on capital market activities. Therefore, this study seeks to empirically examine the impact of monetary policy targets on the transaction values of the capital market in Nigeria.

Literature Review

Conceptual Review

The concept of monetary policy like other economic concepts has different views by different scholars, therefore, the following are the recent definitions and views of scholars regarding monetary. Monetary policy is the macroeconomic policy laid down by the central bank and it involves the management of money supply and interest rate and is the demand side economic policy used by the government of a country to achieve macroeconomic objectives like inflation, consumption, growth, and liquidity (Faradiza, 2016). According to Ajie and Nenbee (2010), monetary policy is a measure designed to influence the availability, volume, and direction of money and credits to achieve the desired economic objectives. It covers the gamut of measures or combinations of packages intended to influence or regulate the volume, prices as well as the direction of money in the economy per unit of time; and specifically, it permeates all the efforts by the monetary authorities to control the money supply and credits conditions to achieve different macroeconomic goals.

While Adigwe, Echekoba, and Onyeagba (2015) said monetary policy is an economic strategy adopted by a government in deciding expansion or contraction in the country's money supply and it is applied usually through the central bank, they also believed that monetary policy employs three major tools: buying or selling national debt, changing credit restrictions, and changing the interest rates by changing reserve requirements. On the role of monetary policy, Purtin, (2015) was of the view that monetary policy plays the dominant role in the control of the aggregate-demand and, by extension, of inflation in an economy which is also called a monetary regime. To him, the actions of a central bank, currency board, or other regulatory committees determine the size and rate of growth of the money supply, which in turn affects interest rates. Institutional, according to CBN (2008), monetary policy concept was defined as "Any policy measure designed by the federal government through the CBN to control cost availability and supply of credit. It is also referred to as the regulation of money supply and interest rate by the CBN to control inflation and to stabilize the currency flow in an economy.

Also, CBN (2011) defined monetary policy as the specific actions taken by the Central Bank (Monetary Authority) to regulate the value, supply, and cost of money in the economy to achieve predetermine macroeconomic goals. That is central banks in both developed and developing countries, seek to achieve price stability through the management of money supply. Money supply comprises narrow and broad money. Narrow money (M1) is defined as currency in circulation with non-bank public and demand deposits or current accounts in the banks. The broad money (M2) includes narrow money plus savings and time deposits, as well as foreign currency denominated deposits. Broad money measures the total volume of money supply in the economy. Thus, excess money supply (or liquidity) may arise when the amount of broad money is higher than the level required to sustain non-inflationary output growth in the economy.

The value of the transaction is the quantity of the securities multiplied by the prevailing market prices of each security per day on which the business was transacted (Osaze, 2007). Thus, transaction deals and value is a volume-based indicator. Volume-based indicators are most useful in measuring market breadth, i.e. the existence of both numerous and large orders in volume with minimal transaction price impact. Traded value/GDP equals the total value of shares traded on the stock market divided by GDP. It measures the organized trading of shares as a percentage of national output and therefore should positively reflect stock market liquidity on an economy-wide basis (Kamal, 2013).

Turnover Ratio Since traded value can be given more meaning by relating it to the value of the outstanding volume of shares being considered, the turnover ratio is commonly used as a second indicator of liquidity. The turnover ratio gives an indicator of the number of times the outstanding volume of shares changes hands. Turnover ratio equals the value of total shares traded divided by market capitalization. In some sense, turnover ratio as an indicator of liquidity complements traded value/GDP. While the former captures market trading relative to the size of the economy, the latter measures trading compared with the size of the stock market.

Empirical Review

There are quite limited empirical studies on the impact of monetary policy on transaction values in the Nigerian Capital Market. Thus, the study reviewed related empirical literature among them are the works of Maku and Atanda (2010) examined the determinants of stock market performance in Nigeria using Error Correction Model. The empirical analysis revealed that the NSE all-share index is more responsive to changes in the exchange rate, inflation rate, money supply, and real output. While the entire incorporated macroeconomic variables were found to have a simultaneous and significant impact on the Nigerian capital market performance in the long-run.

Adaramola (2011) investigated the impact of macroeconomic indicators on stock prices in Nigeria. This work has a unique interest on the individual firm's level. Secondary data on stock prices of selected firms and six macroeconomic variables between 1985:1 and 2009:4 were used for the analysis. The macroeconomic indicators used in the research work are money supply, interest rate, exchange rate, inflation rate, oil price, and gross domestic product. The panel model was used to examine the impact of macroeconomic variables on stock prices of the selected firms in Nigeria. The model was considered appropriate for its ability to combine both time series and cross-sectional data. The empirical findings of the study revealed that macro-economic variables have a varying significant impact on stock prices of individual firms in Nigeria. Apart from the inflation rate and money supply, all the other macroeconomic variables have significant impacts on stock prices in Nigeria. The study, therefore, concluded with empirical evidence that trends in macroeconomic variables can be used to predict the movement of stock prices to a great extent in Nigeria.

Ogbulu and Uruakpa (2011), analyzed the link between monetary policy and stock prices in the Nigerian capital market as well as the direction of causality between monetary policy variables and asset prices using quarterly data from the second quarter of 1986 to the fourth quarter of 2011. The empirical results show that there is one co-integrating long-run dynamic relationship between stock prices and the set of broad money supply, interest rate, foreign exchange rates, and inflation. The parsimonious ECM estimates indicate that broad money supply has a positive and significant impact on stock prices while interest rate depicts a weak relationship with stock prices. Besides, the study reported uni-directional causality from stock prices to broad money supply and also from foreign exchange rate to stock prices. The impulse response and variance decomposition analyses reveal that own shocks from stock prices are the dominant source of variations in the forecast error decomposition.

Similarly, Asaolu and Ogunmuyiwa (2011), investigated the impact of macroeconomic variables on Average Share Price (ASP) and goes further to determine whether changes in macroeconomic variables explain movements in stock prices in Nigeria. The study employed Error Correction Method (ECM) were employed on time series data from 1986-2007 and the results revealed that a weak relationship exists between ASP and macroeconomic variables in Nigeria. The findings further point that ASP is not a leading indicator of macroeconomic performance in Nigeria, albeit, a long-run relationship was found between ASP and macroeconomic variables for the period under review. Chude and Chude (2013) investigated

the effect of broad money supply on the stock market returns in Nigeria. The stationarity test, co-integration test, and error correction model were used as a model. It was discovered that there is a long-run relationship between broad money supply and stock market returns in Nigeria and that broad money supply has been relatively high over the years and has a significant positive impact on the stock market returns in Nigeria.

Nwakoby and Alajekwu (2016) investigated the effect of monetary policies on stock market performance in Nigeria. The study covered a period of 28 years (1986 – 2013). The OLS regression result showed that monetary policy significantly explains 53% of changes in stock market performances in Nigeria. However, Monetary Policy Rate (MPR) has an insignificant positive effect on the All Share Index (ASI) while Lending Rate (INT) has a significant positive effect on the All Share Index (ASI). Furthermore, Treasury Bill Rate (TBR) and Liquidity Ratio (LR) have an insignificant negative effect on All Share Index (ASI) in Nigeria; and Deposit Rate (DR) has a significant negative effect on All Share Index (ASI) in Nigeria. This indicates that monetary policy has the potential (53%) to influence the stock market, but the causality analyses showed that monetary policy cannot influence stock market performance but rather stock market performance has influenced the direction of monetary policy in Nigeria through lending and deposit rates.

Akani and Imegi (2017) examined the effects of monetary policy transmission mechanism on liquidity of Nigerian capital market from 1981-2016. The required data were sourced from Central Bank of Nigeria (CBN) statistical bulletin. The study have capital market liquidity as dependent variable while treasury bill rate, savings rate, prime lending rate, net domestic credit, monetary policy rate, maximum lending rate, exchange rate and credit to private sector as the independent variables. The Ordinary Least Square multiple regressions with econometric view were used as data analysis techniques. Co integration test, Granger Causality Test, Augmented Dickey Fuller Test and Vector Error Correction Model were used to examine the variables and its relationship to the dependent variables. The study found that monetary policy transmission mechanism has significant impact on the liquidity of the capital market.

Anyamaobi (2018)examined the relationship between monetary policy and the performance of the Nigerian capital market using annual time series data sourced from the Central Bank of Nigeria Statistical Bulletin. Market capitalization and market turnover was modeled as the function of interest rate, exchange rate, monetary aggregates, monetary policy rate and treasury bill rate. The study applied the Ordinary Least Square (OLS) regression technique and causality, unit root, cointegration, vector error correction estimates. Findings revealed that interest rate, exchange rate monetary aggregate and monetary policy rate have positive and significant relationship with market capitalization but treasury bill rate have negative and significant relationship with market capitalization. Monetary policy rate, monetary aggregate and exchange rate have positive relationship with market turnover while Treasury bill rate and interest rate have negative and significant relationship with market turnover. The unit root test found the variables stationary at first difference, the cointergration test validates the presence of long run relationship, the granger causality test proved unidirectional causality while the

vector error correction estimates justified adequate speed of adjustment. The study concluded that monetary policy has significant relationship with performance of Nigeria capital market. The study recommended that the monetary authorities should ensure effect monetary policy transmission mechanism that will enhance the performance of the capital market.

Osakwe and Chukwunulu (2019) examined the effect of monetary policy on stock market performance in Nigeria. It employed intermediate monetary policy targets as proxies for monetary policies of the Central Bank of Nigeria and All Share Index as proxy for stock market performance. Monetary policy variables include money supply, interest rate and exchange rate all of which were obtained from the CBN statistical bulletin. The time frame covered 1986 to 2015. Statistical analysis employed was OLS regression technique. The results showed that money supply and exchange rate fluctuation have significant positive effect on stock market price movement, while Interest rate has insignificant negative effect on stock market price movement. On the overall, the results show that monetary policy variables significantly determine 94% of the stock market performance movements in Nigeria. The study posits that monetary policy has a very high determining influence on stock market performance which implies that monetary policy can be used to control stock market activities in Nigeria. It thus recommended, among others that the monetary authorities should make information relevant for securities available to the stock market participants and also make sure the transparency and accountability of audit reports.

Theoretical Framework

The theoretical foundation of this work is based on McKinnon-Shaw's (1973) theories on finance and development which posit that the macroeconomic and fiscal environment is one of the building blocks which determine the success or otherwise of the securities market (Paddy, 1992). McKinnon (1973) advances an argument in favour of a complementary relationship between financial and physical assets. This presupposes that the macroeconomic environment determines the performance of the securities market. This follows from the notion that a conducive macroeconomic environment promotes the profitability of businesses which propels them to a stage where they can access securities for sustained growth.

Based on the above postulations, we note that monetary policy can influence the activities of other sectors of the economy. Thus, the monetary authority can influence other macroeconomic indicators by altering some monetary policy instruments by the Minimum Rediscount Rate (currently known as the Monetary Policy Rate). Generally, the barometers for measuring the performance of the economy include among others real GDP growth rate, rate of inflation, the exchange rate, fiscal position, and the debt position. By changing the Monetary Policy Rate, these monetary economic indicators can be manipulated. Of these, the exchange rate, interest rate, and the rate of inflation can be singled out to affect stock market activity as they impinge directly on the state of corporate activity in the country.

Interest and exchange rates are financial prices for credit and foreign currencies, respectively. They both affect resource allocation, production levels, prices, and profitability. Ultimately, fluctuations in these reflect in share prices – an indicator of market performance. For instance, lowering of interest rate on demand and savings deposits will improve returns to investing on

the exchange relative to investing in deposit money banks (DMBs) holding factors such as risk, transaction costs constant. This will therefore increase the demand and share price of affected equities on the exchange thereby affecting its performance. The phenomenon of dollarization (investing in dollars) also becomes pervasive in an atmosphere of persistent exchange rate depreciation. This diverts resources that could be invested on the exchange into non-functioning assets (such as dollars). Real exchange rate depreciation could also result in capital flight thereby depriving the domestic economy of its investable financial resources.

Agenor (2000) captures these views by stating that interest rate, high inflation, large fiscal deficits, and real exchange rate over-valuation are often key symptoms of macroeconomic instability which constraints private sector investment and savings and thereby results in inefficient allocation of resources on the exchange thereby affecting its performance. As core investors in the stock market consider prevailing economic realities, the opportunity cost of investing in the stock market can be influenced by monetary policy.

Methodology

Sources of Data and Method of Analysis

The study will adopt the secondary method of data collection, the data will be gotten from the Central Bank of Nigeria (CBN) Annual Statistics Bulletin, 2018. The method that will be employed to analyze the behaviour of the data is the use of both descriptive and inferential statistics that is the ex post facto method as stated under the research design. The variables which will be used to determine the specific objective where TVCMN is the transition values of the capital market in Nigeria which is the dependent variable. While the following are the independent variables that are M2 which is the Money Supply, EXCHR which is the Exchange Rate, INFR which is the inflation rate in Nigeria, and INTR which is the interest rate in Nigeria.

The analyses will involve descriptive statistics, graph analysis, trend analysis, correlation analysis, and regression analysis. And Correlation analysis was conducted to determine the strength of the linear association between monetary policy tools (M2 which is the Money Supply, EXCHR which is the Exchange Rate, INFR which is the inflation rate in Nigeria and INTR which is the interest rate in Nigeria) and transition values of the capital market in Nigeria. Besides, the Granger Causality test will be carried out to determine the direction of causation between monetary policy tools and the capital market in Nigeria. Then, the static long-run model will be derived, applying Autoregressive Distributed Lagged (ARDL) - Bounds test procedure to examine the co-integration relationship between monetary policy tools and the capital market in Nigeria. This procedure was developed by Pesaran and Shin (1999) which was later expanded by Pesaran, Shin, and Smith (2001) and the procedure allows the researcher to use variables that are not integrated in the same order. Also, the error correction model (ECM) will be used to establish the short-run and long-run causal relations between monetary policy tools and the capital market in Nigeria.

Model Specification

As stated above under the technique for data analysis, the study will adopt and use the Autoregressive Distributed Lagged (ARDL) model and the Error Correction Model (ECM)

for both the long and short-run impact among the finance and economic variables. The foundation of the model will be based on the theoretical framework of the study. Also, the initial model was adopted from the work of Oniore and Akatugbe (2017) which was stated as follows:

$$In\,\text{ASI} = \alpha_0 + \beta_1 In\text{MPR} + \beta_2 In\text{CPS} + \beta_3 In\text{CPS} + \beta_4 In\text{EXR} + \beta_5 In\text{BMS} + \text{Ut} \qquad (1)$$

Where: ASI = All-Share Index, MPR = Monetary Policy Rate, CPS = Credit to Private Sector, Official Exchange Rate, and Broad Money Supply. In = Natural logarithm, α_0 = the intercept or autonomous parameter estimate, β_1 *to* β_5 = Parameter estimate representing the coefficient of MPR, CPS, EXR, and BMS respectively, and Ut = Error term (or stochastic term). The equation (1) was modified and specified to follow the study objectives and hypotheses stated in chapter one. Therefore, below are the specified Autoregressive Distributed Lagged (ARDL) and the Error Correction Model (ECM) models according to the specific objectives of the study which are as follows:

The Autoregressive Distributed Lagged (ARDL) model that will be used to examine the impact of monetary policy tools on transactions deals of capital market in Nigeria is specified as follows:

$$\begin{aligned}\text{TVCMN} = \alpha_0 &+ \sum_{g=1}^{l} \alpha_{1i}\,\Delta TVCMN_{t-1} + \sum_{h=1}^{m} \alpha_{2i}\,\Delta M2_{t-i} + \sum_{i=1}^{n} \alpha_{3i}\,\Delta EXCHR_{t-i} + \sum_{j=0}^{o} \alpha_{4i}\,\Delta INFR_{t-i} \\ &+ \sum_{k=0}^{p} \alpha_{5i}\,\Delta INTR_{t-i} + \alpha_6 \Delta TVCMN_{t-i} + \alpha_7 \Delta M2_{t-i} + \alpha_8 \Delta EXCHR_{t-i} + \alpha_9 \Delta INFR_{t-i} \\ &+ \alpha_{10} \Delta INTR_{t-i} + \varepsilon_t \qquad (2)\end{aligned}$$

Therefore, equation (3) will be used to estimate and analysis the long-run impact of monetary policy tools on transaction values of the capital market in Nigeria. From equation (3) TVCMN is the transition values of the capital market in Nigeria which is the dependent variable. While the following are the independent variables that are M2 which is the Money Supply, EXCHR which is the Exchange Rate, INFR which is the inflation rate in Nigeria, and INTR which is the interest rate in Nigeria. The Error Correction Model (ECM) that will be used to examine the impact of monetary policy targets on transactions values of the capital market in Nigeria is specified as follows:

$$\begin{aligned}\Delta\text{TVCMN} = \alpha_0 &+ \sum_{g=1}^{l} \alpha_{1i}\,\Delta TVCMN_{t-i} + \sum_{h=1}^{m} \alpha_{2i}\,\Delta M2_{t-i} + \sum_{i=1}^{n} \alpha_{3i}\,\Delta EXCHR_{t-i} + \sum_{j=0}^{o} \alpha_{4i}\,\Delta INFR_{t-i} \\ &+ \sum_{k=0}^{p} \alpha_{5i}\,\Delta INTR_{t-i} + ECM_{t-1} + \varepsilon_t \qquad (3)\end{aligned}$$

Therefore, equation (3) will be used to estimate and analyze the short-run impact of monetary policy tools on transaction values of the capital market in Nigeria. From equation (3) TVCMN is the transition values of the capital market in Nigeria which is the dependent variable. While

the following are the independent variables that are M2 which is the Money Supply, EXCHR which is the Exchange Rate, INFR which is the inflation rate in Nigeria, and INTR which is the interest rate in Nigeria.

Presentation and Discussion of Results

Descriptive Analysis of Variables

Table 1: Descriptive Analysis of Variables

	EXCHR Naira	INTR %	INFR %	M2 Billion Naira	TVCMN Billion Naira
Mean	105.1667	22.56667	20.66818	6100.532	442.9165
Median	118.5000	21.55000	12.90000	1505.960	59.40600
Maximum	362.3000	36.09000	72.80000	27068.58	2350.875
Minimum	1.800000	12.00000	5.400000	23.81000	0.225000
Std. Dev.	93.71303	4.674678	18.79891	8161.254	599.8450
Skewness	0.949744	0.633509	1.636838	1.206235	1.399020
Kurtosis	3.611880	4.062513	4.328793	3.151137	4.427885
Jarque-Bera	5.475875	3.759622	17.16363	8.033922	13.56834
Probability	0.064704	0.152619	0.000187	0.018008	0.001132
Sum	3470.500	744.7000	682.0500	201317.6	14616.24
Sum Sq. Dev.	281028.2	699.2837	11308.76	2.130009	11514050
Observations	33	33	33	33	33

Source: Output from E-views 9.0 (2020)

From table (1) above the study reveals the nature of the data collected for the study. From the table, it can be seen that the mean, median, deviation & also the skewness & Kurtosis measures of interest rate are shown. The mean values of TVCMN, M2, EXCHR, INFR, and INTR are 442.9165 billion Naira, 6100.532 billion Naira, 105.1667 Naira, 20.66818 percent, and 22.5667 percent respectively. Their respective standard deviations are 599.8450billion Naira,, 23.8100 billion Naira, 93.71303 Naira, 18.79891 percent, and 4.674678 percent respectively. From the Table, the Jarque-Bera test of normality reveals that the error term in the equation is normally distributed. This is therefore shown by the various insignificant Jarque-Bera statistics of the relevant variables.

Stationarity Test of Variables

Table 2: Augmented Dickey-Fuller Test

Variable	ADF Statistics	Critical Value	Stationary Status
TVCMN	-5.905044	-3.689194(5%)	I(1)
M2	-5.048826	-2.996263(5%)	I(0)
EXCHR	-4.907381	-2.971853(5%)	I(0)
INFR	-3.119725	-2.963972(5%)	I(1)
INTR	-4.287887	-2.963972(5%)	I(1)

Source: Output from E-views 9.0 (2020)

Table 2 reveals the results, Transaction Values of Capital Market in Nigeria (TVCMN), Inflation Rate (INFR) and Interest Rate (INTR) was stationary at a level while Money Supply (M2) and Exchange Rate (EXCHR) were at first difference. This means that the variables are suitable & fit to be used for analysis.

Co-integration ARDL Bounds Test

Table 3: ARDL Bounds Test of Co-integration

Null Hypothesis: No long-run relationship exist		
Test Statistic	**Value**	**K**
F-stat	5.904818	4
Critical Value Bound		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Output from E-views 9.0 (2020)

Since it was observed that the variables are stationary in a different order the study adopted the ARDL bound test. The above table, therefore, depicts that F-statistics which is obtained from the bound test is 5.904818. When comparing the value of the f-statistics it can be observed that it is higher than both the 2.86& 4.01 for 1(0) & 1(1) respectively. With this, it can be concluded that the variables adopted in the study are co-integrated. Using the ARDL Bound test with the critical value from Narayan (2005), the variables were co-integrated at 1per cent level of significance since the Wald F- statistics is greater than the critical lower and upper bound.

Correlation Analysis of Variables

Table 4: Correlation Analysis of Variables

Correlation Probability	**EXCHR**	**INTR**	**INFR**	**M2**	**TVCMN**
EXCHR	1.000000				

INTR	-0.060380	1.000000			
	0.7385	-----			
INFR	-0.441115	0.171168	1.000000		
	0.0102	0.3409	-----		
M2	0.888986	-0.069199	-0.357822	1.000000	
	0.0000	0.7020	0.0409	-----	
TVCMN	0.624141	-0.113249	-0.401108	0.762882	1.000000
	0.0001	0.5303	0.0207	0.0000	-----

Source: Output from E-views 9.0 (2020)

From table 4 above there is a positive relationship between Exchange Rate (EXCHR), Transaction Values of the Capital Market in Nigeria (TVCMN), and Money Supply (M2) and a negative relationship with Interest Rate (INTR) and Inflation Rate (INFR). This is indicated by their high Pearson Correlation coefficient of 0.889, 0.624, -0061, and -0.441 respectively and they were significant at 1 percent level of significance (LOS) since the p-value is 0.000 except the Interest Rate (INTR) that is insignificant. Meaning an increase or decrease in Exchange Rate (EXCHR) is associated with an increase or decrease in Transition Values of the Capital Market in Nigeria (TVCMN), Money Supply (M2) in Nigeria, Interest Rate (INTR), and Inflation Rate (INFR).

Discussion of Regression Results

Table 5: Long-run regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCHR	-3.242472	1.560369	-2.078016	0.0491
INFR	-4.982111	4.199228	-1.186435	0.2476
INTR	3.555591	16.416939	0.216581	0.8304
M2	0.020811	0.025264	0.823732	0.4186
C	193.826327	425.696525	0.455316	0.6532

Source: Output from E-views 9.0 (2020)

Long run regression results shown in table 5 can be interpreted as follows; a unit increase in the Exchange Rate (EXCHR) and Inflation Rate (INFR) with other variables held constant will bring about a 3.24-unit and 4.98-unit decrease in the Transaction Values of the Capital Market in Nigeria (TVCMN) respectively. While a unit increases in Interest Rate (INTR) and Money Supply (M2) with other things being equal will bring about a 3.55 and 0.02-unit increase in the Transaction Values of the Capital Market in Nigeria (TVCMN) respectively. Finally, based on the probability value, the Inflation Rate (INFR), Interest Rate (INTR), and Money Supply (M2) were statistically insignificant in explaining the variation in the transaction values of the capital market in Nigeria. While Exchange Rate (EXCHR) in Nigeria was statistically insignificant in explaining the variation in the transition values of the capital market in Nigeria.

Table 6: The Error Correction Model Results

Variables	Coefficient	Std. Error	t-Stat	Prob.
D(EXCHR)	-3.346995	1.760556	-1.901101	0.0699
D(INFR)	-5.142713	4.402730	-1.168074	0.2547
D(INTR)	3.670208	17.230266	0.213009	0.8332
D(M2)	0.443134	0.173419	2.555278	0.0177
ECM(-1)	-0.032236	0.007358	-4.381151	0.0002

Source: Output from E-views 9.0 (2020)

The above table (6) shows that the error correction parameter is negative & equally insignificant as it is observed to be -0.03. This implies that 3 percent disequilibrium in the past period is corrected in the current period to restore equilibrium. Short-run regression output

shows that the variables are co-integrated. This implies a short-long run equilibrium relationship exists between the monetary policy targets and transaction values of the capital market in Nigeria. It is also important to test for a short-run relationship. It has therefore been shown that co-integration exists among the variables & equally have a short-run relationship as seen from the model of the error correction. The interest rate in Nigeria and money supply in Nigeria are positively related to the transaction values of the capital market in Nigeria while the exchange rate and inflation rate in Nigeria are negatively related to transaction values of the capital market in Nigeria.

Finally, given the probability money supply was statistically significant in explaining the variation in transaction values of the capital market in Nigeria while the exchange rate, inflation rate, and interest rate in Nigeria were statistically insignificant in explaining the variation in transaction values of the capital market Nigeria. These findings and results agreed with the work of Chude and Chude (2013) who investigated the effect of broad money supply on the stock market returns in Nigeria because both studies agreed that money supply is positively related and statistically significant to transaction values of the capital market in Nigeria. Finally, this implies that an increase in money supply in Nigeria will have a positive impact on the transaction values of the capital market in Nigeria.

Conclusion and Recommendations

In conclusion, the short-run result revealed that the exchange rate and inflation rate in Nigeria were negatively related to transaction values of the capital market in Nigeria but statistically insignificant in explaining any variation in transaction values of the capital market in Nigeria. Also, though the interest rate in Nigeria was positively related to transaction values of the capital market Nigeria it was statistically insignificant in explaining any variation in transaction values of the capital market in Nigeria. While the supply of money was positively related to transaction values of the capital market in Nigeria and was statistically significant at a 5 percent level of significance. However, the long-run result revealed that the supply of money and interest rate was positively related to transaction values of the capital market in Nigeria while the exchange rate and inflation rate in Nigeria were positively related to transaction values of the capital market in Nigeria but it was only exchange rate in Nigeria that was statistically significant to transaction values of the capital market in Nigeria at 5 percent level of significance. Based on the findings the study recommends the following policies.

i. The government should design a mechanism to increase money supply to capital market activities since it was statistically significant in determining the improvement of transaction values of the capital market in Nigeria.
ii. The government should manage the activities relating to Exchange Rate (EXCHR), Inflation Rate (INFR) and Interest Rate (INTR) through targeting policies in order to encourage the transaction values of the capital market in Nigeria.

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APPENDIX I

YEAR	TVCMN	M2	EXCHR	INFR	INTR
1986	0.497	23.81	1.8	11.6	12
1987	0.382	27.57	4	67.47	19.2
1988	0.850	38.36	4.5	22.9	17.6
1989	0.610	45.9	7.4	45.8	24.6
1990	0.225	52.86	8	7.5	27.7
1991	0.242	75.4	9.9	13	20.8
1992	0.491	111.11	17.3	44.5	31.2
1993	0.804	165.34	22.1	57.2	36.09
1994	0.985	230.29	22	57	21
1995	1.838	289.09	21.9	72.8	20.79
1996	6.979	345.85	21.9	29.3	20.85
1997	10.330	413.28	21.9	8.5	23.32
1998	13.571	488.15	21.9	10	21.34
1999	14.072	628.95	92.3	6.6	27.19
2000	28.153	878.46	101.7	6.9	21.55
2001	57.683	1,269.32	111.2	18.9	21.34
2002	59.406	1,505.96	120.6	12.9	30.19
2003	120.402	1,952.92	129.2	14	22.88
2004	225.820	2,131.82	132.9	15	20.82
2005	262.935	2,637.91	131.3	17.9	19.49
2006	470.253	3,797.91	128.7	8.4	18.7
2007	1,076.020	5,127.40	125.8	5.4	18.36
2008	1,679.143	8,008.20	118.5	11.5	18.69
2009	685.717	9,411.11	148.9	12.6	22.62
2010	799.910	11,034.94	150.3	13.8	22.51
2011	638.925	12,172.49	154.7	10.9	22.42
2012	808.994	13,895.39	157.5	12.2	23.79
2013	2,350.875	15,160.29	157.3	8.5	24.69
2014	1,338.600	17,679.29	158.6	8	25.74
2015	978.047	18,901.30	192.4	9	26.71
2016	620.018	21,607.68	362.3	18.27	26.3
2017	1,078.491	24,140.63	305.7	10.71	17.78
2018	1,284.976	27,068.58	306.0	13.0	16.44

Source: Central Bank of Nigeria Statistical Bulletin, December 2018