



THE IMPACT OF QUANTITATIVE MONETARY POLICY TOOLS ON THE PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA (ACCESS BANK NIGERIA PLC, UYO)

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Abstract: The study examined the impact of quantitative monetary policy tools on the performance of deposits money banks (Access Bank) in Nigeria with data spanning from 1993-2020. This study adopted Expos- facto research design, in order to achieve the objectives stated in the study as linked with hypotheses. Data used in the study was obtained through secondary sources from CBN statistical bulletin of 2020, relevant journal, textbooks and newspaper. The Ordinary Least Square Multiple Regression Technique, E view 10 was used to run the data (test the hypotheses). Turnover ratio was used as proxy for bank performance which was the dependent variable while monetary policy tools such as money supply, monetary policy rate, cash reserve ratio and liquidity ratio were the independent. From the findings, it was generally revealed that monetary policy have positive impact on the Turnover Ratio (TR) of deposit money banks (Access Bank) through money supply (MS) and Cash Reserve Ratio (CRR). On the other hand, it shows that Liquidity Ratio (LR) and Monetary Policy Rate (MPR) as monetary policy instruments negatively affects the Turnover Ratio (TR) of banks. Since Evidence suggest that the monetary policy tools have varying effects on the performance of deposit money banks in Nigeria but more effective when combined, as such, the CBN should effectively monitor all investigated monetary policy tools in this study as to regulate the activities of Nigerian deposit money banks.

Key words: Monetary Policy Rate, Liquidity Ratio, Interest Rate, Turnover Ratio, Money Supply

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1. INTRODUCTION

1.1. Background to the Study

All functioning and stable economy is basically governed by the extent and effectiveness of the policies guiding the flow of funds within its sphere, the government rules and body of doctrines, the amount of financial institutions and also the quantum of money that is being pumped into the economy by the Central Bank. The quantitative monetary policies which includes open market operation (OMO), moral suasion, special deposit, credit control and discount rate serves as a regulation and principles to maintain development of an economy. Since the government policies which are the quantitative monetary policies instruments cannot operate in a vacuum, its effectiveness and implementations are being imposed and determined by the financial institutions (Alawiye 2013).

The Central Bank of Nigeria (CBN) over the years, have instituted various monetary policies to regulate and develop the financial system in order to achieve major macroeconomics objectives which often conflict and result to distortion in the economy. Although, some monetary policy tools like cash reserve and capital requirements have been used to buffer the liquidity creation process of deposit money banks through deposit base and credit facilities to the public. It also determines certain targets on monetary variable. Although, some objectives are consistent with each other, others are not, for example, the objective of price stability often conflict with the objective of interest rate stability and high short run employment. The role of the banking industry in the development process cannot be over-emphasized as they play so many functions. The most important banking industry In Nigeria is the deposit money bank because it entails two third of government regulation (Central Bank of Nigeria 1992).

The reserve requirement tool helps deposit money banks (DMBs) deal with unforeseen future contingencies. An example of the reserve requirement tool is the cash reserve requirement which is 27.5% and the liquidity ratio which is 30% (Solomon 2016). The reserve requirement helps the banks to cope in the event of excessive multiple withdrawals. It is a very effective tool for safeguarding the banks from unusual disturbances in the market. Banks can also influence their lending, the volume of deposits and credits, deposit rate, etc. the main purpose behind maintaining a reserve is regulating the supply of money. Though, the reserve requirement has some related issue, when banks

maintain reserve, there is possibility for low maintenance of liquidity especially for banking institutions that have low excess reserve (Taylor 2004).

Open Market Operation (OMO) helps to increase the quantum of money supply both in the banking sector thereby affecting the entire economy, it could also be used to contract money if the flow of money supply is excess. So it could be used to increase investment, increment in employment and also in saving and disposable income of citizens (Okpara 2010).

There were eighty nine DMBs in Nigeria before the 2005 bank recapitalization exercise and the number has reduced drastically to twenty five banks after consolidation and twenty three after the merger of IBTC and Stanbic IBTC Bank, access and diamond bank (Solomon 2016). The capitalization rate implemented by the monetary authorities has made stable the DMBs in Nigeria.

It is therefore necessary at this point to undertake an assessment of the extent to which quantitative monetary policy has impacted the performance of deposit money banks.

1.2. Statement of Problems

Regardless of the extent of policies that are being made to regulate deposit money banks activities, there are still some loopholes and difficulties in the implementation of the policies created whereby some occur with the regulatory body, while others are from the banks itself. Perhaps the greatest obstacle facing the instrument is the problem of lags (Tobin, 2008). In the real world, however, it may take several months before anyone even realizes that a particular macroeconomic problem is occurring. When monetary authorities become aware of a problem, they can act quickly to inject reserves into the system or to withdraw reserves from it. Once that is done, however, it may take a year or more before the action affects aggregate demand. The delay between the time a macroeconomic problem arises and the time at which policy makers become aware of it is called a recognition lag (Uchendu, 2009). Only after policy makers recognize there is a problem that they can take action to deal with it. The delay between the time at which a problem is recognized and the time at which a policy to deal with it is enacted, is called the implementation lag. The impact lag for monetary policy occurs for several reasons. Firstly, it takes some time for the deposit multiplier process to work itself out. The central bank can inject new reserves into the economy immediately, but the deposit expansion process of bank lending will need time to have its full effect on the

money supply. Interest rates are affected immediately, but the money supply grows more slowly. Again, firms need some time to respond to the monetary policy with new investment spending depending on time of response. Thirdly, a monetary change is likely to affect the exchange rate, but that translates into a change in net exports only after some delay. Thus, the shift in the aggregate demands curve due to initial changes in investment and in net exports occurs after some delay. Finally, the multiplier process of an expenditure change takes time to unfold. It is only as incomes start to rise that consumption spending picks up.

Therefore, the main thrust of this study is to assess the impact of quantitative monetary policy tools on the performance of deposit money banks. This will go a long way in assessing the extent to which the monetary policies are impactful on the general performance of the deposit money banks.

1.3. Objectives of the Study

The main objective of this work is to actually determine the impact of quantitative monetary policy tools on the performance of deposit money banks (Access Bank) in Nigeria. The specific are as follows:

1. To find out the effectiveness of money supply on the performance of deposit money banks (Access Bank) in Nigeria.
2. To determine the contribution of liquidity ratio on the performance of deposit money banks (Access Bank) in Nigeria.
3. To appraise whether monetary policy rate has influenced the performance of deposit money banks (Access Bank) in Nigeria.
4. To ascertain if cash reserve ratio is beneficial on the performance of deposit money banks (Access Bank) in Nigeria.

1.5. Hypotheses of the Study

The following null hypotheses will be used for the study

- H_{01} : Money supply has no significant impact on the performance of deposit money banks (Access Bank) in Nigeria.
- H_{02} : Liquidity ratio has no significant effect on the performance of deposit money banks (Access Bank) in Nigeria..
- H_{03} : Monetary policy rate has no significant impact on the performance of deposit money banks (Access Bank) in Nigeria.

H₀₄: Cash reserve ratio has no significant impact on the performance of deposit money banks (Access Bank) in Nigeria.

1.7 Scope of the Study

The focus point of this study is the general performance of all banks in Nigeria in relation to the impacts of quantitative tools of monetary policy (specifically for DMBs) with data covering a period of 28 years (1993-2020). This period of study is crucial because of the various financial reforms experienced in the country.

2. REVIEW OF RELATED LITERATURE

2.1. Conceptual Review

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 (Ekpung, Udede and Uwalaka, 2015). Put differently, monetary policy refers to the actions of the Central Bank to regulate the money supply which could be through discretionary 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 (Chigbu and Okonkwo, 2014).

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 levels where credit demand and money growth are at a level consistent with aggregate supply elasticity (Mishra and Pradhan, *et al*).. 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 (Nnanna, 2001). Abata 2015 has it that it is the combination of measures designed to regulate the values, 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.

In Nigeria, the banking ordinance of 1952 is seen as the root of monetary policy guiding the financial institutions in the country. Banks offer demand on transaction deposits as well as provision on lending services and because of these

degree of risks in the banking sector, their businesses are heavily regulated. This regulation of banks came into existence to combat bank failures of the 1940s and 1950s. Subsequently, other monetary policies came up in 1958, 1969, 1979 and it has been so till date (Central Bank of Nigeria 1993).

Monetary policy could either be expansionary or contractionary depending on the overall policy objective of the monetary authorities. Monetary policy is expansionary when the policy thrust of the authorities increases the supply of money in the system; and contractionary when the action reduces the quantity of money supply available in the economy or constrains the growth or ability of the DMBs to grant further credits (Felicia 2011).

2.1.1. Measurement of Banks' Performance

Development literatures provide various criteria for gauging the performance of commercial banks. In most cases, bank performance is assessed in terms of profitability, Liquidity and Credit worthiness and Management (Ibeabuchi 2007 and Alford, 2011). Selected variables often used to gauge the performance of the banking system are as provided.

2.1.2. Instruments of Quantitative Monetary Policy

Fiduciary or paper money is issued by the Central Bank on the basis of computation of estimated demand for cash. Adefaso (2010) noted that Monetary policy guides the Central Bank's supply of money in order to achieve the objectives of price stability (or low inflation rate), full employment, and growth in aggregate income. This is necessary because money is a medium of exchange and changes in its demand relative to supply, necessitate spending adjustments. Borio (1995) is of the view that, to conduct monetary policy, some monetary variables which the Central Bank controls are adjusted-a monetary aggregate, an interest rate or the exchange rate-in order to affect the goals which it does not control. The instruments of monetary policy used by the Central Bank depend on the level of development of the economy, especially its financial sector. The commonly used instruments are discussed below.

Legal Reserve Requirement: The Central Bank may require Deposit Money Banks to hold a fraction (or a combination) of their deposit liabilities (reserves) as vault cash and or deposits with it. Burns (2005), Fractional reserve limits the amount of loans banks can make to the domestic economy and thus limit the supply of money. The assumption is that Deposit Money Banks

generally maintain a stable relationship between their reserve holdings and the amount of credit they extend to the public. The legal reserve requirement is being made up of cash reserve requirement which is 27.5% and liquidity ratio 30%.

Open Market Operations: The Central Bank buys or sells ((on behalf of the Fiscal Authorities (the Treasury) securities to the banking and non-banking public (that is in the open market). One such security is Treasury Bills. When the Central Bank sells securities, it reduces the supply of reserves and when it buys (back) securities-by redeeming them-it increases the supply of reserves to the Deposit Money Banks, thus affecting the supply of money. CBN(2010), the Federal Reserve buys and sells government securities to control the money supply and interest rates. This activity is called the open market operation, to increase the money supplied, the federal will purchase securities from banks, which injects into the banking system. It will sell securities to reduce the money supply.

Lending by the Central Bank: The Central Bank sometimes provide credit to Deposit Money Banks, thus affecting the level of reserves and hence the monetary base.

Interest Rate: The Central Bank lends to financially sound Deposit Money Banks at a most favorable rate of interest, called the minimum rediscount rate (MRR). Felicia (2011), the MRR sets the floor for the interest rate regime in the money market (the nominal anchor rate) and thereby affects the supply of credit, the supply of savings (which affects the supply of reserves and monetary aggregate) and the supply of investment (which affects full employment and GDP).

Direct Credit Control: The Central Bank can direct Deposit Money Banks on the maximum percentage or amount of loans (credit ceilings) to different economic sectors or activities, interest rate caps, liquid asset ratio and issue credit guarantee to preferred loans. In this way the available savings is allocated and investment directed in particular directions.

Exchange Rate: The balance of payments can be in deficit or in surplus and each of these affect the monetary base, and hence the money supply in one direction or the other. By selling or buying foreign exchange, the Central Bank ensures that the exchange rate is at levels that do not affect domestic money supply in undesired direction, through the balance of payments and the real.

2.1.3. Rationale for monetary policy

Monetary authorities developed monetary policy to accomplish some specific objectives, which should be climax in the achievement of macro-economic goals. According to Okoye (2011), the principal objectives of monetary policy measures employed by the Central Bank of Nigeria on behalf of the Federal Government is to restrain the level of credit to the more productive sector of the economy in order to stimulate the production of goods and services to increase the level of savings and investments and to reduce the persistently high liquidity of the banking system, in order to maintain monetary stability.

In their own view, Chigbuet *al* (2014) stated that, the ultimate goals of monetary policy are to assure stable prices, prevent high unemployment and foster economic growth. Further, they contend that the policy measures are directed at certain variable as targets intermediates in order to achieve the goals.

In their own contribution, Anyanwu and Olawode (1993) state that monetary policy in Nigeria is aimed at moderating the inflation rate promotion of growth, reducing pressures on the external sector, stabilizing the naira exchange rate, and including increased financial saving, investment and employment.

From all the above, it is pellucid that monetary policy measures and instruments are brought about to redress the imbalances of in-equilibrium in the economic system and so seek to pull or push the economy into the desired path. However, it is pertinent to note that in seeking to attain all these objectives and goals, it is the banks that are the channels. Hence, their activities are affected in one way or the other.

Theoretical Framework

The conduct of monetary policy in most economies today is rooted in strong theoretical foundations such as.

The Keynesian Theory

Generally speaking, (Keynes's 1930) analysis that monetary policy has the interest rate and regulation as its most important instruments is still the core of the tools for monetary management. Nevertheless, following (Keynes 1945), debt management can be regarded as one further instrument for monetary policy. Besides the interest rate and regulation, we also discuss in this section what debt management is and how it channels its effects on effective demand

in achieving the monetary policy goals. Thus, the instruments of the Post Keynesian monetary policy rest on three pillars: interest rate, debt management and regulation, hence this study is anchored on it.

Empirical Literature

Ogbulu (2012) considered the impact of monetary policy on DMBs lending in Nigeria using First Bank of Nigeria as a case study 1975-2009. Applying multiple regression analysis on the data obtained, he found that monetary policy variables had positive but insignificant influence on bank lending behavior of First Bank Nigeria. In a similar examination for Zenith Bank of Nigeria from 2005 to 2012 using both descriptive and secondary data, Imoisi (2013) found that the profitability of Zenith Bank of Nigeria hung only on minimum rediscount rates; other policy rates had no useful impact on the bank's profitability.

Olatunji and Ekpenyong (2013), in a study of the Indian economy and six other Emerging Market Economies of Brazil, Chile, Korea Republic, Mexico, Turkey and South Africa from 2002-2010, a panel data analysis showed that, at a controlled environment, monetary policy rate, especially changes in policy rates dictate the pace of demand for credit in Indian banks. The intermediate outcome was that the pace of economic activities in the area was intrinsically linked to movements in the policy rate of the country.

For Godslove (2015), monetary policy can exert inadequate pressure on the lending portfolio of DMBs in Nigeria. In one of such studies between 1988-2008 using Vector Error Correction Mechanism, the author found that monetary policy instruments were ineffective in stimulating commercial bank loans and advances in the long-run. He thus, suggested that the Central Bank of Nigeria should make efforts to develop indirect policy instruments and exercise appropriate control over the monetary sector.

Okoro (2013) investigated the impact of monetary policy on the entire banking system in Nigeria from 1970-2006 using Ordinary Least Square regression technique. In their study, they proxied deposit liabilities as a performance index. Their result showed that taken by the individual policy tool, deposit rate and minimum rediscount rate exerted negative pressure on deposit liabilities in Nigerian banks while exchange rate was the one that delivers positive deposit liabilities relationship. Their result also showed that the conduct of monetary policy in the country can make or mar savings mobilization for the general economy. Hence, proper use of the tools can create enabling business-friendly environment.

Mmaduabuchi and Okonkwo (2015) examined the impact of monetary policy and the functioning of deposit money banks in Nigeria from the period 1993-2013. They applied ordinary least square technique on the data obtained for the purpose. Of the variables of monetary policy used, only bank deposit rate was found to produce negative impact on the operations of deposit money banks in Nigeria in the period. The liquidity ratio instrument provided positive but insignificant impact on bank performance. Overall, there was no causal link between monetary policy and bank performance in diverse periods. They therefore, concluded that the apex bank should make more use of bank deposit rates as a policy instrument for Nigeria.

Pradhan, and Tobin (2008) showed that the monetary policy regime period can affect the performance of DMBs in Nigeria. Applying regression analysis and Pearson Product Moment analysis in SAP period (1986-1999) and post SAP period (2000-2013) they found that post SAP periods monetary policies helped Nigerian banks to deliver positively on deposit mobilization and credit dissemination among competing users. A near similar case was also found for the Kenyan economy by Ikhide (1993).

Onourah and Udeh (2011) investigated the effects of selected monetary policies on loans portfolio performance among 30 DMBs in Kenya using both primary and secondary data. The selected policy variables were open market operations, central bank rate, minimum reserve requirements and Kenya bankers' reference rate on loans portfolio performance. Their outcome showed no positive correlation between open market operations, central bank rate, Kenya bankers' reference rate and loans portfolio performance so much so that they push for downward reduction in these rates for meaningful effect to be felt sooner. Their results were somehow different from that reported by Sanusi (2010). In their similar study of 26 DMBs in the country using multiple regression analysis, they found that discount rates, inflation rates and exchange rates correlate positively with bank performance in Kenya, even when reserve requirement ratio may tend to slow down such performance in the country.

Friday (2011), investigated the effect of monetary policy on the turnover of DMBs in Nigeria from 1980 to 2015. Applying multiple regression analysis on the data, the author found that liquidity ratio was negative and significant in relation with bank turnover rate, while money supply had a positive and significant effect in relation with bank assets, and that cash reserve ratio had a negative and significant impact on bank loans and advances.

It may be possible for banks in Nigeria to improve on the quality of their asset as a result of good policy mix of the apex bank. Okwu and Mbajaku (2012) showed that this is so for Nigerian banks from 1980 to 2015. Their study used Ordinary Least Square technique on bank performance indices proxied by Turnover rate, Bank Asset and Loan and Advances. Their result showed that bank performance measure is sensitive to the type of monetary policy instrument used. Therefore, they concluded that the strength of monetary policy lies on the combination of the various instruments.

3. METHODOLOGY

3.1. Research Design

Research design provides the framework for finding solution to any problem under study. For this study, the research is both descriptive and empirical in nature. The researcher adopts a descriptive and quantitative design in order to establish the relationship between quantitative monetary policy tools and the performance of Deposit Money Banks (Access Bank). This research design is suitable for this study because it will allow the researcher to use secondary data in establishing cause and effect relationship between the identified in the research.

3.2. Sources of Data Collection

The data for this study will be obtained mainly from secondary source i.e. Central Bank Nigeria (CBN) statistical bulletin. In order to investigate the impact of quantitative monetary policy instruments on Performance of Deposit Money Banks In Nigeria, information from the annual financial statement concerning Banks' Turnover Ratio(TR), Money supply (Ms), Liquidity Ratio (LR), Monetary Policy Rate(MPR),Cash Reserve Ratio(CRR) between the period of years 1993-2020 will be used. Other Secondary Sources of data are relevant journals, textbooks and newspapers.

3.3. Method of Data Analysis

Ordinary Least Square technique i.e. Regression analysis will be adopted to obtain interpretable findings. The relationship between quantitative monetary policy indicators; Money supply (MS), Liquidity Ratio (LR), Monetary Policy Rate(MPR),Cash Reserve Ratio(CRR) and Banks' Performance indicator; Turnover Ratio will be examined using the Multiple Regression analysis. The

regression outputs will be obtained using Statistical Package for Social Sciences (SPSS) package.

3.4. Procedure for Data Analysis

Data was analyzed based on each if the research question and the hypothesis. Data for each of the research question and hypothesis were analyzed using descriptive statistics of sample percentage and table where necessary. However, data for each of the research hypothesis were analyzed using ratio analysis of key ratios in the banking industry. These ratios include liquidity ratio (LR), cash reserve ratio (CRR), turnover ratio (TR), money supply (MS) and monetary policy rate (MPR). And also multiple regression analysis and ordinary least square method (OLS), Correlation Co-efficient R^2 , co-efficient of determination R^2 , t-statistics and F-statistics.

3.5. Model Specification

In this study, the model shall contain two equations. Whilst the first is on determinant of Quantitative Monetary Policy (QMP) indicators in Nigeria, the second is on Impact of quantitative monetary policy indicators on Performance of Deposit Money Banks (Access Bank) in Nigeria using Turnover Ratio as the dependent variable; the explanatory variables include Money supply (MS), Liquidity Ratio (LR), Monetary Policy Rate(MPR),Cash Reserve Ratio (CRR) which represent indicators of quantitative monetary policy.

The model to be used will be expressed mathematically as thus:

Equation one and two can written as

$$\text{QMP} = (\text{MS}, \text{LR}, \text{MPR}, \text{CRR}) \quad (1)$$

$$\text{TR} = f(\text{MS}, \text{LR}, \text{MPR}, \text{CRR}) \quad (2)$$

Where:

QMP= Quantitative Monetary Policy,

TR= Turnover Ratio,

LR= Liquidity Ratio,

MPR= Monetary Policy Rate,

CRR= Cash Reserve Ratio.

Multivariate Regression model would be;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n + \epsilon_{it}$$

$$QMP = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

$$X_1 = Ms,$$

$$X_2 = LR,$$

$$X_3 = MPR,$$

$$X_4 = CRR$$

Y = the value of dependent variables;

α = the constant term;

β = the coefficient of the function;

X = the value of independent variables;

ϵ = error term.

Thus, Regression equation becomes;

$$QMP = \alpha + \beta_1 Ms_{it} + \beta_2 LR_{it} + \beta_3 MPR_{it} + \beta_4 CRR_{it} + \epsilon_{it}$$

4. ANALYSIS AND INTERPRETATION OF RESULT

4.1. Absolute

The results obtained from the estimated equation through Ordinary Least Square (OLS) are summarized in the table below:

Table 4.1: Regression Output

| Econometric Model: OLS | | | |
|---|-------------|------------|-------------|
| Period of Study: 1993 – 2020 | | | |
| Observations: 28 | | | |
| Dependent Variable: Turnover Ratio (TR) | | | |
| Variable | Coefficient | Std. Error | T-Statistic |
| Constant | 125.40 | 12.05 | 10.40 |
| MS | 9.64MS | 0.00026 | 0.37 |
| LR | -1.24LR | 0.29 | - 4.22 |
| MPR | -1.65MPR | 0.53 | - 3.14 |
| CRR | 0.51CRR | 0.17 | 2.96 |
| $R^2 = 0.55 \quad DW = 1.35 \quad F - statistic = 7.13$ | | | |

Source: Extracted from E-views 10 Output

Table 4.1 above shows the estimated model of the relationship between monetary policy and the performance of Access Bank as a deposit money bank

in Nigeria. It gives an overview of the sign and size of each coefficient and their statistical significance. Almost all the numbers are rounded up to two decimal points.

The estimated model shows that monetary policy positively affects the Turnover Ratio (TR) of deposit money bank (Access Bank) through money supply (MS) and Cash Reserve Ratio (CRR). On the other hand, it shows that Liquidity Ratio (LR) and Monetary Policy Rate (MPR) as monetary policy instruments negatively affects the Turnover Ratio (TR) of banks. In the regression, a unit increase in Money Supply (MS) corresponds to a 9.64 percent increase in Turnover Ratio (TR) while a unit increase in Cash Reserve Ratio (CRR) would lead 0.51 percent increase in the bank's turn-over. Furthermore, a unit increase in Liquidity Ratio (LR) would with its negative effect lead to a 1.24 percent decrease in the bank's turn-over while a unit increase in Monetary Policy Rate (MPR) will lower the rate of the bank's turn-over by 1.65 percent.

A Durbin-Watson Statistic below 2 indicates the possibility for positive autocorrelation which is very common in studies using time series data (Abata, 2015). By comparing the value obtained from the regression with the upper and lower limits from the appropriate table, it can be concluded that the value is higher than the upper limit for the critical values of the Durbin-Watson statistic and hence, the null hypothesis of no autocorrelation cannot be rejected at 5 percent significant level.

This regression further aims at explaining the behavior of the dependent variable, Turnover Ratio (TR) by changes in the explanatory variables. The goodness of fit, R^2 , has a value of 0.55, which implies that 55 percent of the variation in the dependent variable can be explained by the model's independent variables. By comparing the F-Statistic with a critical obtained from the F-distribution table, it is possible to investigate whether the value of R^2 reflects a true relationship or if it has arisen as a matter of chance (Abata, 2015). The F-statistic shown above has a value of 7.13 and the critical value from the F-distribution table is 2.80. If the F-statistic is higher than the critical value, the null hypothesis can be rejected. Therefore, the suggestion that the R^2 value has arisen by chance is rejected concluding that there is a true relationship.

To verify the statistical significance for each independent variable, t-tests are carried out. In order to reject the null hypothesis that β is equal to zero, the t-test for each variable has to lie outside a critical t-value obtained from the t-table. The critical values in this case are 1.714 for five percent significant level. By comparing the t-statistic displayed above with the critical values, these

values show that only Cash Reserve Ratio (CRR) is significant at five percent level of significance while the other variables – Money Supply (MS), Liquidity Ratio (LR) and Monetary Policy Rate (MPR) have too low t-statistic to be significant at both five percent significant level.

4.1. Unit Root Test Analysis

Table 4.2a: Augmented Dickey Fuller (ADF) Unit Root Test

| Augmented Dickey Fuller (ADF) Unit Root Test | | | | | |
|--|-------------------------------|------------------------------|------------------------------|--------------|---------------|
| <i>Series</i> | <i>ADF Test Statistic</i> | <i>1% Critical Value</i> | <i>5% Critical Value</i> | <i>Order</i> | <i>Remark</i> |
| TR | -4.06 | -3.71 | -2.98 | (1) | Stationary |
| MS | 0.42 | -3.71 | -2.98 | (1) | Stationary |
| LR | -2.69 | -3.70 | -2.98 | (1) | Stationary |
| MPR | -4.55 | -3.70 | -2.98 | (1) | Stationary |
| CRR | -1.42 | -3.70 | -2.98 | (1) | Stationary |

Source: E-views 9 Output

Table 4.2b: Phillips-Perron (PP) Unit Root Test

| Phillips-Perron (PP) Unit Root Test | | | | | |
|-------------------------------------|------------------------------|------------------------------|------------------------------|--------------|---------------|
| <i>Series</i> | <i>PP Test Statistic</i> | <i>1% Critical Value</i> | <i>5% Critical Value</i> | <i>Order</i> | <i>Remark</i> |
| TR | -3.23 | -3.70 | -2.98 | (1) | Stationary |
| MS | 1.73 | -3.70 | -2.98 | (1) | Stationary |
| LR | -2.76 | -3.70 | -2.98 | (1) | Stationary |
| MPR | -4.42 | -3.70 | -2.98 | (1) | Stationary |
| CRR | -1.49 | -3.70 | -2.98 | (1) | Stationary |

Source: E-views 9 Output

The unit root tests of Augmented Dickey Fuller (ADF) and the Phillip Perron (PP) tests were carried out. Considering the results of ADF and the PP at 1 and 5 percent levels, it is revealed that the test statistic are greater than the critical values with the exception of TR in ADF and MPR at PP. Hence, almost all the variables in the series are said to be stationary at these levels. The unit root tests show that the variables TR, MS, LR, MPR and CRR are integrated of the same order, i.e. I(1). Their levels of integrations indicate the number the time series has to be differenced before achieving their stationary. From the results, it is shown that both the ADF and the PP tests with trend and intercept confirm that the time series are integrated of the same order. The linearity of the combination of series integrated of the same order also reveals that the time series are co-integrated.

4.3. Cointegration Test

Table 4.3.: Johansen-Juselius Co-integration Test

| <i>Hypothesized No. of CE(s)</i> | <i>Trace Statistic</i> | <i>Max-Eigen Statistic</i> | <i>Critical Values (5%)</i> | |
|--------------------------------------|----------------------------|--------------------------------|-----------------------------|------------------|
| | | | <i>Trace</i> | <i>Max-Eigen</i> |
| None* | 71.79 | 31.09 | 69.82 | 33.88 |
| At most 1 | 40.70 | 18.85 | 47.86 | 27.58 |
| At most 2 | 21.85 | 14.26 | 29.80 | 21.13 |
| At most 3 | 7.59 | 7.58 | 15.49 | 14.26 |
| At most 4 | s0.00069 | 0.0069 | 3.84 | 3.84 |

Source: E-views 9

Both Trace and Max-Eigen indicate 1 co-integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level to show the long-run relationships between the Turnover Ratio (TR) and the explanatory variables, Money Supply (MS), Liquidity Ratio (LR), Monetary Policy Rate (MPR) and Cash Reserve Requirement (CRR), the Johanson co-integration test was carried out. In the test, there is the existence of co-integrated vector. The Trace and Max-Eigen statistic results of Johansen-Juselius which determine whether the results are co-integrated showed the values are statistically significant to reject the null hypothesis at 5% level of significance. Both the Trace and Max-Eigen tests show one co-integrating equation at the 5% level. Hence, the null hypothesis of no co-integration among the variables is rejected. The test results indicate that there exist long-run equilibrium relationships in the model at 5% significant level. That is there exists one long-run co-integrating relationship between TR and its determinant.

4.4. Error Correction Model (ECM)

Table 4.4.: Error Correction Model (ECM)

| <i>Variables</i> | <i>Coefficient</i> | <i>Standard Error</i> | <i>T-Statistic</i> |
|------------------|--------------------|-----------------------|--------------------|
| D(MS) | 4.62 | 23.75 | 0.19 |
| D(LR) | - 0.28 | 0.20 | - 1.39 |
| D(MPR) | 0.013 | 0.07 | 0.17 |
| D(CRR) | 0.62 | 0.31 | 2.08 |

Source: E-views 9

The Error Correction Model (ECM) is used to show short-run relationships among co-integrating equations compared to the presence of their long-run. Comparing the result with that of the OLS reveals that Liquidity Ratio (LR) still maintained a negative sign at an increased trend with Monetary Policy Rate (MPR) having a positive sign. Money Supply (MS) variable still exhibited a positive value but at lesser trend value. Cash Reserve Requirement (CRR) also still exhibited a positive trend value and an increased trend. This implies that there will be a change from the short-run trend to their long-run values if the existing dis-equilibrium is not corrected.

4.5. Test of Research Hypotheses

This section presents the decision of the test of the hypotheses stated in chapter one of this work. This was reached using the t-test statistic decision rule. If $t\text{-cal} > t\text{-tab}$, accept the alternative hypothesis (H_1) and reject the null hypothesis (H_0) and if $t\text{-cal} < t\text{-tab}$, accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1).

Hypothesis 1: Since $t\text{-cal} = 0.37 < t\text{-tab} = 1.714$, hence, we reject the alternative hypothesis (H_1) and accept the null hypothesis (H_0) and conclude that money supply has no significant impact on the performance of deposit money bank (Access Bank) in Nigeria.

Hypothesis 2: Since $t\text{-cal} = -4.22 < t\text{-tab} = 1.714$, we therefore reject the alternative hypothesis (H_1) and accept the null hypothesis (H_0) and conclude that liquidity ratio has no significant effect on the performance of deposit money bank (Access Bank) in Nigeria.

Hypothesis 3: Since $t\text{-cal} = -3.14 < t\text{-tab} = 1.714$, we therefore reject the alternative hypothesis (H_1) and accept the null hypothesis (H_0) and conclude that monetary policy rate has no significant impact on the performance of deposit money bank (Access Bank) in Nigeria.

Hypothesis 4: Since $t\text{-cal} = 2.96 > t\text{-tab} = 1.714$, hence, we accept the alternative hypothesis (H_1) and reject the null hypothesis (H_0) and conclude that cash reserve ratio has no significant impact on the performance of deposit money bank (Access Bank) in Nigeria.

5. CONCLUSION

The study has carefully examined the impact of monetary policy on the performance of deposit money banks in Nigeria with emphasis on Access Bank. The study found that monetary policy generally has positive impact on

the performance of deposit money banks in Nigeria. Regardless of this, some of the monetary policy tools have positive impact while some still exhibit weak impact. Hence, findings revealed that the positive impact of monetary policy which relies on the combination of the various policy tools has not been strong as expected as it has not been effectively harnessed in the country. The findings thus, support the monetarist view that monetary policy when effectively utilized can have effect on banks' activities and their portfolio performance.

Thus, the following recommendations will aid in the effective applications of monetary policy instruments in Nigeria.

5.1. Policy Recommendations:

Based on the findings made in this study, the following recommendations have been made to address some of the problems discovered:

1. Liquidity Ratio showed the least impact in the performance of deposit money banks, so the CBN should review its use for more effectiveness.
2. The Cash Reserve Ratio should be complementing the Liquidity Ratio in ensuring that liquidity is maximized in the banking system as there will be a balance between bank financial stand and customers demand for credit.
3. The cash reserve ratio seems to be the most effective tool; therefore it should be moderated in order not to affect the lending ability of deposit money banks.
4. The CBN should adjust the Monetary Policy Rate by reducing the Cash Reserve Ratio which will increase bank liquidity ratio to enable deposit money banks discharge their lending and investment duties to the public effectively.
5. Evidence suggest that the monetary policy tools have varying effects on the performance of deposit money banks in Nigeria but more effective when combined, as such, the CBN should effectively monitor all investigated monetary policy tools in this study as to regulate the activities of Nigerian deposit money banks.

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APPENDIX I

Data on Turnover Ratio of DMBs (Access Bank), Money Supply, Liquidity Ratio, Monetary Policy Rate and Cash Reserve Ratio (1993-2020)

| <i>YEAR</i> | <i>TR %</i> | <i>MS (N'Billion)</i> | <i>LR %</i> | <i>MPR%</i> | <i>CRR%</i> |
|-------------|-------------|---------------------------|-------------|-------------|-------------|
| 1993 | 42.9 | 165.34 | 42.2 | 26 | 48.5 |
| 1994 | 60.9 | 230.29 | 48.5 | 13.5 | 48.5 |
| 1995 | 73.3 | 289.09 | 33.1 | 13.5 | 33.1 |
| 1996 | 72.9 | 345.85 | 43.1 | 13.5 | 43.1 |
| 1997 | 76.6 | 413.28 | 40.2 | 13.5 | 40.2 |
| 1998 | 74.4 | 488.15 | 46.8 | 13.5 | 46.8 |
| 1999 | 54.6 | 628.95 | 61 | 18 | 61 |
| 2000 | 51 | 787.46 | 64.1 | 14 | 64.1 |
| 2001 | 65.6 | 1269.32 | 52.9 | 20.5 | 52.9 |
| 2002 | 62.8 | 1505.96 | 52.5 | 16.5 | 52.5 |
| 2003 | 61.9 | 1952.92 | 50.0 | 15 | 50.9 |
| 2004 | 68.6 | 2131.82 | 50.5 | 15 | 50.5 |
| 2005 | 70.8 | 5127.4 | 48.8 | 9.5 | 48.8 |
| 2006 | 63.6 | 3797.91 | 55.7 | 10 | 55.7 |
| 2007 | 70.8 | 5127.4 | 48.8 | 9.5 | 48.8 |
| 2008 | 80.9 | 8008.2 | 44.3 | 9.75 | 3 |
| 2009 | 85.7 | 9411.11 | 30.7 | 6 | 1.3 |
| 2010 | 74.2 | 11034.94 | 30.4 | 6.25 | 1 |
| 2011 | 44.8 | 12172.49 | 42 | 12 | 8 |
| 2012 | 42.3 | 13895.39 | 48.3 | 12 | 2 |
| 2013 | 37.6 | 15160.29 | 53.2 | 12 | 12 |
| 2014 | 63.6 | 17979.29 | 38.3 | 13 | 20 |
| 2015 | 69.6 | 18901.3 | 37.1 | 11 | 20 |
| 2016 | 80 | 21607.68 | 35.8 | 14 | 22.5 |
| 2017 | 72.8 | 24140.68 | 45.4 | 14 | 22.5 |
| 2018 | 60.2 | 25079.72 | 43.2 | 14 | 22.5 |
| 2019 | 58.7 | 25332.62 | 49.7 | 13.5 | 22.5 |
| 2020 | 58.4 | 25842.34 | 44.7 | 13.5 | 22.5 |

Source: CBN Statistical Bulletin 2021