Monetary Policy and Bank Performance Nexus in Nigeria: A Critical Analysis

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Abstract

This study examined the impact of monetary policy variables on deposit money banks' performance using return on equity as the indicator of bank performance. The monetary policy instruments (Cash Reserve ratio, liquidity ratio, Monetary Policy Rate) and deposit money banks' performance proxied by return on equity were collected from the NDIC publications and CBN Statistical Bulletin and various issues of CBN's Annual Statement of Accounts. The time series data covered the period of 1985 to 2020. The regression tool employed revealed that Cash Reserve ratio has positive relationship with return on equity while liquidity ratio and Monetary Policy Rate have no significant relationship with Return on Equity. The results imply that bank performance is not significantly affected by CBN's monetary policy measures. Therefore, it is suggested among others that the Central Bank of Nigeria (CBN) should moderate its monetary policy instruments to ensure their effectiveness on deposit money banks.

Keywords: Return on Equity, Cash Reserve ratio, liquidity ratio, Monetary Policy Rate, CBN.

1.1 Introduction

The existence of an effective banking sector is necessary for every economy because it creates the necessary environment for economic growth and development through its role in intermediating funds from surplus economic units to deficit economic units. Banking sector includes financial intermediaries whose activities revolve in the main mobilization of savings and lending of funds, thus standing in between the ultimate lender and the borrower and matching the investment requirement of the lender with available savings. This stimulates both investments and international trade. In playing this important role of financial intermediation, the banking sector is seen as effective institution in the use of monetary policy, which relies on the control of money stock to influence financial and economic activities (Ekpung, Udude & Uwalaka, 2015).

Deposit money banks funds come mainly from their shareholders, depositors and from borrowing from other sources. For these funds to be effectively utilized, they have to be prudently invested in assets that are capable of yielding positive returns in different ways, bearing in mind that the

importance of profit cannot be over-emphasized and also that the continued existence of a bank, its ability to lend an increasing amount and undertake risk investment depend considerably on the optimal management of its assets and liabilities. Equally important is the need for adequate income through interest on loan to ensure continued provision of productive resources and survival. It therefore becomes uneconomic and financially unreasonable for banks to allow excess idle cash in the vault or excess liquidity (Olagunju, Adeyanju & Olabode, 2011).

The banking industries in any economy in the world is the most important sector because of their ability to mobilize funds from the savings to the deficit sector of the economy. According to Onoh (2002), they mobilize the largest amount of funds because of their ability to accept deposits of any kind from the public, government and its agencies as well as create credit through granting of loans, overdraft and project financing which are all factors for enhancing economic performance for growth and development.

Monetary policy involves changing the interest rate and influencing the money supply. It is a policy used to pursue policies of higher economic growth or controlling inflation. It is usually carried out by the Central Bank who is charged with the following monetary policy role of maintaining price stability, exchange rate stability, balance of payment equilibrium, maintaining full employment and growth in the economy (Balami, Ahmed & Yusuf, 2016). In the opinion of Onuorah, Shaib, Oyathelemi, and Friday (2011), "it is a deliberate attempt by the monetary authorities (Central Bank) to control the money supply and credit condition for the purpose of achieving certain broad economic objective. Okpara (2010) defines monetary policy as a measure designed to influence the availability, volume and direction of money and credits to achieve the desired economic objectives.

Monetary Policy derives from the function given to the Central Bank of Nigeria (CBN) by the federal government to control the aggregate monetary demand in the economy. The policy is designed to see to the stability of monetary aggregates in the economy as well as stability in wages and prices of goods and services. The bank is also responsible for the control of the volume of money in circulation and to give the domestic money a value via other controls (Akanbi & Ajagbe, 2012). The Central Bank is responsible for the conduct of monetary policy to pursue those objectives (Kyari, 2015, Okonkwo, Godslove, & Mmaduabuchi, 2015). Central Banks in the world such as the Central Bank of Nigeria (CBN) often employ certain monetary policy instruments like bank rate, open market operations, changing reserve requirements and other selective credit control instruments inorder to achieve its monetary objectives. Although, some objectives are consistent with each other, others are not, for example, the objectives of price stability often conflicts with the objective of interest rate stability and high short run employment (Felicia, 2011; Obidike, Ejeh & Ugwuegbe, 2015; Victor &Eze, 2013).

The major objectives of monetary policy have been to subdue inflation to a single-digit level and maintain a stable exchange rate of the naira. Attention has also been focused on the need for a more competitive financial sector geared towards improving the payments system. The CBN has also continued to ensure banking soundness and financial sector stability, not only to ensure the

effective transmission of monetary policy actions to the real sector but also to enhance the efficiency of the payments system. The measures taken to strengthen the banking sector and consolidate the gains of monetary policy included the introduction of a 13-point reform agenda in the banking sector in July 2004 (the key point of which was the 25-billion-naira minimum capital base for Deposit Money Banks (Ibeabuchi, 2007).

In recent times Nigeria monetary policy has been based on a medium-term perspective framework. The shift was to free monetary policy implementation from the problem of time inconsistency and minimize over-reaction due to temporary shocks. Several authors (Okoro, 2013; Uchendu 2009) documented that policies have ranged from targeting monetary aggregates to monitoring and manipulating policy rates to steer the interbank rates and by extension other market rates in the desired direction. This thesis thus aims to further examine monetary policy implementation and its impact on banking performance in Nigeria.

1.1   Statement of the Problem

The impact of monetary policy on banking performance in Nigeria has received divergent results. The use of monetary policy instruments such as cash reserve ratio, monetary policy rate, money supply, etc, by the Central Bank of Nigeria is to ensure stability in the banking sector and influence the soundness of their assets (Ogbulu & Torbira, 2012; Solomon, 2016). Some researchers found insignificant impact of monetary policy instruments on banks while others assert that the effect is minimal (Ajayi & Atanda, 2012; Akanbi & Ajagbe, 2012; Ogbulu & Torbira, 2012, Okoro, 2013; Okoye & Udeh, 2009; Okpara, 2010; Solomon, 2016). This according to Okpara (2010) was as a result of banks manipulation of their financial report and statement of account. However, while banks continue to witness poor asset quality, the level of banks with high toxic assets remains high thus questioning the effect of monetary policy on banks' asset quality and returns.

Another problem observed is the poor credit creation of banks. Sanusi (2011) noted that banks have deviated from their traditional banking function of providing loans and advances to small and medium scale industries to delving into investment in blue chip companies, stocks trading, foreign exchange trading and oil trading which are speculative in nature thus raising the high level of their non-performing loans. The essence of monetary policy rate, reserve ratio and money supply control is to influence banks credit creation which in all ramifications has shown insignificant impact as noted by past studies (Mishra & Pradhan, 2008). The problem of ineffective credit delivery to the productive sectors remains an issue and thus raises doubt on the potency of monetary policy instruments in influencing the direction of bank credit to the Nigeria economy.

Classical and monetarist theories have argued on monetary policy as an instrument of regulation tending to impact on banks return. It is the view of the CBN to ensure safely and returns of commercial banks using monetary policy but in what way do these instruments affect banks returns and what relationship do some of these instruments have on banks profitability? Owing to the above stated problems, this paper attempts to find out the true nature and the extent to which

monetary policy instruments have been successful in impacting on banking performance proxied by return on equity in Nigeria.

The remaining sections of this study are arranged as follows; section two takes care of review of related literature; section three addresses the materials and methods of analysis adopted; section four analyses the data, results, and interpretation while section five handles conclusion and recommendations for policy making.

2. Review of Related Literature

2.1 Conceptual Framework

Ezenduyi (1994) defines monetary policy as the policy which involves the adjustment of money stock (through different means) interest rate, exchange rate as well as expectation to influence the level of economic activities and inflation in desired direction, targeting as the mopping up of excess liquidity aimed at ensuring a non-inflationary macro-economic environment. Monetary policy can be defined as the instruments at the disposal of the monetary authorities to influence the availability and cost of credit/money with the ultimate objective of achieving price stability (Ibeabuchi, 2007).

Onyeiwu (2012) defines monetary policy as a technique of economic management to bring about sustainable economic growth and development which have been the pursuit of nations and formal articulation of how money affects economic aggregate. Monetary policy generally refers to the deliberate efforts of the government to use changes in money supply, cost of credit, size of credit and direction of credit to influence the level of economic activities to achieve desired macroeconomic stability in an economy (Chigbu & Okonkwo, 2014).

The instruments of monetary policy have been classified broadly in two categories. Quantitative instruments-Traditional and non-traditional quanlitative instruments (Richard, 1979). Monetary policies, as adopted in Nigeria, have four broad objectives, they are: (Ibeabuchi, 2007):

a) **To maintain a high level of employment (full employment):** Full employment means employment of labour, plant and machinery at a tolerable capacity to achieve the set goals of national economic policy aimed at combating recession and economic depression (Ibeabuchi, 2007).

b) **To maintain stable price level:** Price level stability goal is related in an important sense to the control of inflation and refers to a situation of sustained and rapid increase in the general level of prices, however, generated (Nnanna, 2001). According to Ibeabuchi (2007), inflation reduces real disposable income and consequently the purchasing power of money.

c) **To maintain the highest sustainable rate of economic growth:** This means both quantitative and qualitative increase in the total quantity of goods and services produced in the economy annually (Nnanna, 2001). Nnanna opined that economic growth is said to be achieved in a country in a situation where there is an increase in the income position of the

citizens of the country and also a corresponding increase in the amount of goods and services which a given quantity of money can buy.

d) **To maintain the highest equilibrium in the balance of payments:** A country's balance of payment may be in total equilibrium if there exists between total payments and total receipts, that is, the avoidance of larger or chronic deficit or surplus in the balance of payments (Imoisi, Olatunji, & Ekpenyong, 2013; Nnanna, 2001).

2.1.1 Monetary Policy Instruments

According Ibeabuchi (2007), as earlier stated, the instruments of monetary policy can be categorized into two namely: Direct or quantitative instruments and Indirect or qualitative instruments

2.1.2 Direct Instruments or Quantitative Instruments of Monetary Policy Tools

Though there is an avalanche of instruments available for money and credit control, the instrument mix to be employed at any time depends on the goals to be achieved and the effectiveness of such instrument to a large extent hinges on the economic fortunes of the country (Nnanna, 2001; Ojo, 1993).

1. **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. 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 (Ibeabuchi, 2007).

2. **Special Deposits:** The central bank has the power to issue directories from time to time requiring all banks to maintain with it as 'special deposit an amount equal to the percentages of the institution's deposits liabilities or the absolute increase in its deposit liabilities over an amount outstanding at a certain date (Ibeabuchi, 2007; & Ojo, 1993).

3. **Moral Suasion:** Moral suasion simply means the employment by the monetary authority of friendly persuasive statement, public pronouncement outright appeals the monetary authority sometimes uses the less tangible technique to influence the lending policies of commercial banks (Ibeabuchi, 2007). Hence the Central Bank of Nigeria holds periodic meetings with the bankers' committees and on other occasion meets formally or informally with the leaders in the banking community (CBN, 2020). Such contacts are geared towards the development of confidence between the Central Bank and other banks. It affords the central bank the opportunity to discuss the improvement in standards and conducts in the banking industry.

4. **Selective Credit Control:** According to Nnanna (2001), this instrument is used to distinguish among the sectors of the economy into preferred and less preferred sectors. This is usually designed to influence the direction of credits in the economy so as to ensure that credits go to those sectors designed "preferred". It is very useful where a country operates development plans like Nigeria. When plans are drawn up these credit controls will be integrated in the

budget. In the course of government's programme to revitalize say agricultural production which is designated favoured sector, credits to such favoured sectors are at low interest rate while the least favoured sectors pay the high rate of interest (Ibeabuchi, 2007).

5. **Direct Credit Control:** According to CBN (2020), 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 (Ibeabuchi, 2007).

6. **Prudential Guidelines:** The Central Bank may in writing require the Deposit Money Banks to exercise particular care in their operations in order that specified outcomes are realized (CBN, 2020). Key elements of prudential guidelines remove some discretion from bank management and replace it with rules in decision making (Ibeabuchi, 2007).

2.1.3 Indirect Instruments or Qualitative Instruments of Monetary Policy

Fiduciary or paper money is issued by the Central Bank on the basis of computation of estimated demand for cash. To conduct monetary policy, some monetary variables which the Central Bank controls are adjusted such as monetary aggregate, interest rate or the exchange rate in order to affect the goals which, it does not control. These instruments of monetary policy used by the Central Bank are called indirect or qualitative instruments of monetary policy and depend on the level of development of the economy, especially its banking sector. The commonly used qualitative instruments are discussed below (CBN, 2020):

1. **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, 2020; Ibeabuchi, 2007; Ojo, 1993; Solomon, 2016).

2. **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 (CBN, 2020).

3. **Interest Rate:** The Central Bank lends to financially sound Deposit Money Banks at a most favourable rate of interest, called the minimum rediscount rate (MRR) or Monetary Policy Rate (MPR) in Nigeria. 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) (Obidike, Ejeh, & Ugwuegbe, 2015; Solomon, 2016; Victor & Eze, 2013).

4. **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 exchange rate. The real exchange rate when misaligned affects the current account

balance because of its impact on external competitiveness (Akpan, 2008: Imoisi, Olatunji &Ekpenyong, 2013; Ibeabuchi, 2007; & Sanusi, 2010).

5. **Rediscount Rate:** The rediscount rate is the rate at which the central bank stands really to provide loan accommodation to commercial banks (CBN, 2020). As a lender of last resort, such lending by the central bank is usually at panel rates. By making appropriate changes in the rate, the central bank controls the volume of total credits indirectly. This has the purpose of influencing the lending capacity of the commercial banks. During the periods of inflation, the central bank may raise the rediscount rate making obtaining of funds from the central bank more expensive. In this way, credit is made tighter (Nnanna, 2001). Similarly, in depression, when it is necessary to encourage commercial banks to create more credits, the central bank will lower the rediscount rate.

6. *Cash Reserve Requirements:* Ojo (1993) posit that the reserve requirement can be manipulated by the Central Bank to reduce the ability of commercial banks to give loans to the public by simply increasing the ratio or enhancing their lending position by decrease in the ratio. Reserve requirement is loan of the most powerful instruments of monetary control (CBN, 2020). A change in the required reserve ratio changes the ratio by which the banking system can expand deposit through the multiplier effect. If the required reserve ratio increases, the multiplier decreases and thereby reduces the liquidity position of the banking system.

2.2 Theoretical Review

There are different transmission channels through which monetary policy affects banking and economic activities and these channels of transmissions have been broadly examined under the monetarist and Keynesian schools of thought (Onyeiwu, 2012).

2.2.1 Classical Theory

The widely accepted approach to monetary economics was known as the *quantity theory of money,* used as part of a broader approach to micro and macro issues referred to as *classical economics* from the works of Irving Fisher who laid the foundation of the quantity theory of money through his equation of exchange. In his proposition money has no effect on economic aggregates but price. The classical school evolved through concerted efforts and contribution of economists like Jean Baptista Say, Adam Smith, David Richardo, Pigou and others who shared the same beliefs. The classical economists decided upon the quantity theory of money as the determinant of the general price level. Most believed the quantity of money determines the aggregate demand which in term determines the price level (Amacher & UIbrich, 1986). The quantity theory of money was not only a theory about the influence of money on the economy and how a Central Bank should manage the economy's money supply, but it represented a specific view of the private market economy and the role of government. The private market such as banks provided the best framework for achieving socially and economically desired outcomes (Onuorah, Shaib, Oyathelemi, & Friday, 2011).

According to the theory, the role of government was to provide a system of laws and security to protect private property, as well as providing a stable financial and monetary framework (Onuorah, Shaib, Oyathelemi, & Friday, 2011). The theory posits that money affects the economy which is the reason why Central banks adopt monetary policy to control the flow of money in the economy through banks that are regarded as the private market industry that mobilizes the largest volume of money in any economy (Solomon, 2016). The economic depression of the 1930s and the emergence of Keynesian economics drastically changed attitudes about the role of money and monetary policy as a tool of economic stabilization. Monetary policy was then viewed as an ineffective method of fighting depressions, and the belief in a self-regulating market that reached socially desirable results was destroyed (Onyemaechi, 2005).

If the quantity of money is doubled, the price level will also double and the value of money will be one half. Fisher's theory also known as equation of exchange is stated thus,

$$MV=PT \quad \text{...} \quad (1)$$

Where:

M= actual money stock or money supply

V= the transaction velocity of circulation of money.

P= the average price level

T= the real volume of all market transactions made during a period of time.

Fisher posited that the quantity of money (M) times the velocity (V), must equal average price level (P) times the aggregate transaction (T). The equation equates the demand for money (PT) to the supply of money (MV).

In the equation, T is better replaced with Q "quantity of goods involved" hence the Fisherian equation can be written as $MV = PQ$... (2)

Fisher further stated that the average price in the economy (P) multiplied by the amount of transaction (T) when divided by the money stock (M) gives us a volitional element called the average turnover of money or money velocity (V). i.e. $PT/M = V$.

Doubling the money stock will lead to a doubling of the price level since T and V do not change. Velocity is seen as constant because factors that would necessitate a faster movement in the velocity of money evolve slowly. Such factors include among others, population density, mode of payment (weekly/monthly), availability of credit sources, nearness of stores to individuals etc. Thus, it is seen that there exists a direct and proportional relationship between money stock and

price level. The theory is based on the assumption of neutrality of money (Ajudua, Davis, & Osmond, 2015).

2.2.2 Keynesian Theory

In 1936, John Maynard Keynes published his "General Theory of Employment, Interest and Money" and initiated the ***Keynesian Revolution.*** However, the role of money in an economy got further elucidation from (Keynes, 1930) and other Cambridge economists who proposed that money has indirect effect on other economic variables by influencing the interest rate which affects investment and cash holding of economic agents. Keynes maintained that monetary policy alone is ineffective in stimulating economic activity because it works through indirect interest rate mechanism. From the Keynesian mechanism, monetary policy works by influencing interest rate which influences investment decisions of financial institutions such as banks and the public and consequently, output and income via the multiplier process (Amacher & Ulbrich, 1989; Gertler & Gilchrist, 1991; Okpara, 2010; Solomon, 2016). Keynes posits that government had the responsibility to undertake actions to stabilize the economy and maintain full employment and economic growth, using fiscal policies. He therefore recommends a proper blend of monetary and fiscal policies as at some occasions, monetary policy could fail to achieve its objective (Onyemaechi, 2005).

The original Keynesian view that emerged from the Great Depression was challenged on two fronts. First, the early view that money and monetary policy were relatively unimportant was judged incorrect. Second, the basic premise of the Keynesian model was the inherent instability of the market system and the right and responsibility of the government to conduct an active stabilization policy. Some economists questioned this premise and argued that efforts to stabilize the economy through active monetary and fiscal policies were not likely to generate long-run improvement in the real performance of the economy, but were more likely to generate instability (Friedman, & Schwartz, 1963; Modigliani, 1963; Richard, 1979).

In simple terms, the monetary mechanism of Keynesians emphasizes the role of money, but involves an indirect linkage of money with aggregate demand via the interest rate as symbolically shown below:

$\downarrow$OMO$\rightarrow\downarrow$ R$\rightarrow\uparrow$MS$\rightarrow\downarrow$r $\rightarrow$ I$\rightarrow\downarrow$GNP

Where, OMO = Open Market Operation

R = Commercial Bank Reserve
MS = Stock of Money
r = Interest Rate
I = Investment
GNP = Gross National Product

On a more analytical note, if the economy is initially at equilibrium and there is open market purchase of government securities by the Central Bank of Nigeria (CBN), this open Market Operation (OMO) will increase the commercial banks reserve (R) and raise the bank reserves. The bank then operates to restore their desired ratio by extending new loans or by expanding bank credit in other ways. Such new loans create new demand deposits, thus increasing the money supply (MS). A rising money supply causes the general level of interest rate (r) to fall. The falling interest rates affects commercial bank performance and in turn stimulate investment given businessmen expected profit. The induced investment expenditure causes successive rounds of final demand spending by GNP to rise by a multiple of the initial change in investment. On the other hand, a fall in money supply causes the general level of interest rate (R) to rise or increase thereby increasing the commercial banks profitability (Jhingan, 2005).

2.2.3 Monetarism/Neo-Classical Theory

Owing to the criticism that bedeviled the Keynesian theory, the monetarist theory was propounded by Milton Friedman in 1956. The role of monetary policy which is of course influencing the volume, cost and direction of money supply was effectively conversed by Friedman (1963), whose position is that inflation is always and everywhere a monetary phenomenon. He recognises that in the short run increase in money supply can reduce unemployment but can also create inflation and so the monetary authorities should increase money supply with caution (Onyemaechi, 2005). The monetarist essentially adopted Fisher's equation of exchange to illustrate their theory, as a theory of demand for money and not a theory of output, price and money income, by making a functional relationship between the quantities of real balances demanded a limited number of variables.

Monetarists like Friedman (1963) emphasized money supply as the key factor affecting the wellbeing of the economy. Thus, in order to promote steady of growth rate, the money supply should grow at a fixed rate, instead of being regulated and altered by the monetary authority (ies). Friedman equally argued that since money supply is substitutive not just for bonds but also for many goods and services, changes in money supply will therefore have both direct and indirect effects on spending and investment respectively. The monetarist introduces an additional factor in the determination of interest rate, which is price expectation; an increase in supply of money has a liquidity effect on income effect and price effect. Also in the monetarist thinking, is that they felt it more important of money in explaining macro-economic behaviour monetarist important of money and therefore monetary policy was given attention in the neoclassical school (Onouorah, Shaib, Oyathelemi, & Friday, 2011).

Symbolically, the monetarist conception of money transmission mechanism can be summarized below:

↑OMO →↑MS→ Spending→↑ GNP

The monetarist argument centers on the old quantity theory of money. If velocity of money in circulation is constant, variation in money supply will directly affect prices and output or income (GNP), (Jhingan, 2005).

The monetarist postulates that change in the money supply leads directly to a change in the real magnitude of money. Describing this transmission mechanism, Friedman & Schwartz (1963) say expansive open market operations by the Central Bank, increases stock of money, which also leads to an increase in commercial bank reserves and ability to create credit and hence increase money supply through the multiplier effect. In order to reduce the quantity of money in their portfolios, the bank and non-bank organizations purchase securities with characteristics of the type sold by the Central Bank, thus stimulating activities in the real sector. This view is supported by Tobin (1978) who examines transmission effect in terms of assets portfolio choice in that monetary policy triggers asset switching between equity, bonds, commercial paper and bank deposits. He says that tight monetary policy affects liquidity and banks' ability to lend which therefore restricts loan to prime borrowers and business firms to the exclusion of mortgages and consumption spending thereby contracting effective demand and investment.

Conversely, the Keynesians posit that change in money stock facilitates activities in the financial market affecting interest rate, investment, output and employment (Keynes, 1930). Modigliani (1963) supports this view but introduced the concept of capital rationing and said willingness of banks to lend affects monetary policy transmission. In their analysis of use of bank and non-bank funds in response to tight monetary policy, Oliner and Rudebush (1995) observe that there is no significant change in the use of either but rather larger firms crowd out small firms in such times and in like manner. Gertler & Gilchrist (1991) supports the view that small businesses experience declines in loan facilities during tight monetary policy and they are affected more adversely by changes in bank related aggregates like broad money supply. Further investigation by Borio (1995) who investigated the structure of credit to non-government borrowers in fourteen industrialized countries observe that it has been influenced by factors such as terms of loan as interest rates, collateral requirement and willingness to lend.

Researchers found varying results on the effect of monetary policy on banks performance using banks assets portfolio and credit creation (Amacher &Ulbrich 1989; Gertler & Gilchrist, 1991; Okpara, 2010; & Ogbulu & Torbira, 2012; Solomon, 2016). Thus, adopting the monetarist theory on the use of monetary policy in influencing the performance of banks, this study takes further steps to support or reject the assertion of this theory.

2.3   Empirical Studies

Ogbulu & Torbira (2012) investigated the empirical relationship between measures of monetary policy and the bank asset (BKA) channel of the monetary transmission mechanism as well as the direction of causality between them. Using data for the period 1970-2010 and employing co-integration, error correction mechanism and variance decomposition techniques, the study found a positive and significant long run relationship between BKA, money supply (MNS), cash reserve

ratio (CRR) and Minimum Rediscount Rate (MRR) as well as a uni-directional Granger causality from BKA and CRR to MNS respectively. The results of the variance decomposition of BKA to shock emanating from CRR, MRR and MNS show that own shocks remain the dominants source of total variations in the forecast error of variables. The authors recommend that monetary policies should be properly fashioned to accomplish their target objectives in the economy.

Okwo, Mbajiaku & Ugwunta (2012) examined the effect of bank credit to the private sector on economic growth in Nigeria using data on Gross Domestic Product (GDP) and bank credit to private sector (BCPS). Inflation and interest rates were included in the study as control variables. All data were obtained from Central Bank of Nigeria (CBN) statistical bulletin and span across 1981 to 2010. Data stationarity was ensured using the Augmented Dickey Fuller (ADF) statistic, while the OLS were applied to ascertain the impact of bank credit to the private sector on economic growth. Results of the analysis showed that bank credit to private sectors has a statistical strong positive relationship with GDP and that as expected, bank credit to the private sector has statistically significant effect on economic growth. The paper recommends that the CBN should lower its minimum rediscount rate to a moderate level that will enable banks fix low interest rates on their loanable funds.

Olokoyo (2012) analyzed the areas that have been deregulated in the banking sector and how it has affected bank performance. To realize these objectives, the study analyzed secondary data collected from CBN statistical bulletin by employing the Ordinary Least Square (OLS) technique. This study found out that the deregulation of the banking sector has positive and significant effect on bank performance. It recommended that bank management should embark on effective intermediation drive that will bring all the small savers to the purview of the banks, banks should improve their total asset turnover.

Olweny & Chiluwe (2012) explored the relationship between monetary policy and private sector investment in Kenya by tracing the effects of monetary policy through the transmission mechanism to explain how investment responded to changes in monetary. the study utilized quarterly macroeconomic data from 1996 to 2009 and the methodology draws upon unit roots and co-integration testing using a vector error correction model to explore the dynamic relationship of short-run and long-run effects of the variables due to an exogenous shock. The study showed that monetary policy variables of government domestic debt and Treasury bill rate are inversely related to private sector investment, while money supply and domestic savings have positive relationship with private sector investment consistent with the IS-LM model. Based on the empirical results the study suggests that tightening of monetary policy by 1% has the effect of reducing investment by 2.63% while the opposite loose monetary policy tends to increase investment by 2.63%.

Onyeiwu (2012) examined the impact of monetary policy on the Nigerian economy using the Ordinary Least Squares Method (OLS) to analysed data between 1981 and 2008. The result of the analysis shows that monetary policy presented by money supply exerts a positive impact on GDP growth and Balance of Payment but negative impact on rate of inflation. Furthermore, the findings

of the study support the money-prices-output hypothesis for Nigerian economy. Obviously, the empirical studies on monetary policy and real output growth in Nigeria is still scanty.

Fasanya, Onakoya & Agboluaje (2013) examined the impact of monetary policy on economic growth in Nigeria. The study uses time-series data covering the range of 1975 to 2010.The effects of stochastic shocks of each of the endogenous variables are explored using Error Correction Model (ECM). The study shows that long run relationship exists among the variables. Also, the core finding of this study shows that inflation rate, exchange rate and external reserve are significant monetary policy instruments that drive growth in Nigeria. It is therefore recommended that the establishment of primary and secondary government bond markets that can also increase the efficiency of monetary policy and reduce the government's need to rely on the central bank for direct financing.

Imoisi, Olatunji, & Ekpenyong (2013) examined the efficacy of monetary policy in achieving Balance of Payments stability in Nigeria. The research was conducted using an Ordinary Least Squares (OLS) technique of multiple regression models using statistical time series data from 1980-2010. The estimated result shows a positive relationship between the dependent variable (Balance of Payments) and the independent variables (Money Supply, Exchange Rate and Interest Rate). Specifically, Money Supply and Interest Rate had significant relationship with Balance of Payments, whereas Exchange Rate was not statistically significant. It recommended that the government should promote the exportation of Nigerian products especially the non-oil products.

Olokoyo (2013) further assessed the effects of the reforms on the performance of banks in Nigeria. The data was gathered through the instrument of questionnaire with eighty (80) copies were collated and analysed using Analysis of Variance (ANOVA) method was used to test the hypothesis using the statistical package for social sciences (SPSS). The study shows that the recapitalization and consolidation process has had significant effect on the manufacturing sector of the economy and thus on the Nigerian economy at large. The study further reveals that despite the reforms, post consolidation challenges like challenges of increased return on investment still exist. According to study, some sections of the Nigerian populace, the reforms are seen to have come too soon and thus, rendering sections of the economy such as the lower class, illiterates and the economically active poor, incapable of banking transactions. The reforms however are very necessary for our banks to imbibe best corporate governance practice, improve on self-regulation, institute IT-driven culture and seek to be competitive in today's globalizing world.

Okoro (2013) examined the impact of monetary policy on Nigerian economic growth from 1970 - 2010. Using a time series data the study employed Augmented Dickey-Fuller (ADF) test, Philips-Person Unit Test, Co-integration test and error correction model (ECM) techniques in the analysis of the data collected. The study result shows that there exists a long-run equilibrium relationship between monetary policy instruments and economic growth in Nigeria. From the result interest rate and inflation rate were negatively correlated with gross domestic product (GDP), while Exchange rate, money supply and Credit to the Economy were positively related to GDP, based

on the long-run test. It suggests that there is need for a suitable monetary supply policy through inflation targeting.

In other related studies, Aminzadeh & Irani (2015) scrutinized the effect of using monetary policy related tools on the return of private banks stocks admitted in stock exchange with stress on the volume of liquidity, the rate of interest, and the amount of partnership bonds. Using panel data, testing the research hypotheses was been carried out through an analysis of multiple-regression. The result shows that there was a weak significant correlation between volume of liquidity and the amount of published partnership bonds and the return of the stocks of private banks admitted in stock market; meanwhile, the interest rate at an assurance level of 95% had a negative and significant correlation with the return of the stocks of private banks admitted in stock exchange.

Abata (2015) empirically examined the impact of AMCON, proxying a securitisation, on the performance of Nigerian Banks. The study adopted a combination of descriptive and explanatory survey research designs. These instruments were administered on fifty-one (51) respondents drawn from relevant departments of the twenty-one (21) Deposit Money Banks (DMBs) in Nigeria, while hypothesis one was tested using ordinary least square (OLS) regression analysis, hypothesis two was tested using chi-square non- parametric test. The findings revealed that AMCON has positively impacted on the asset quality and liquidity of these banks. In contrast, not much of the impact of AMCON has been felt on the capital adequacy of these banks. The findings also revealed that AMCON has contributed to the stability of the Nigerian Banking Industry. On the strength of these findings, this study concluded that AMCON, a financial crisis resolution vehicle, has positively impacted on the performance of the Nigerian Banks and by extension, has contributed to the industry's stability.

Ajudua, Davis & Osmond (2015) evaluated the impact of monetary policy variables on the agricultural sector in Nigeria from 1986 – 2013. Employing the ordinary least square (OLS) regression method, a multiple regression equation to check the economic relationship between agricultural output with Agriculture Gross Domestic Product (AGDP) as the dependent variable, and Money Supply (MS), Interest Rate (INT), Monetary Policy Rate (MPR) and Inflation Rate (INF) as explanatory variables was carried out. The unit root test to check for stationarity of variables and the Johansen Co-integration test to establish long run equilibrium relationship between the dependent and explanatory variables were employed. The study revealed that there exists a relationship between monetary policy and agricultural sector performance in Nigeria with an increase in the budgetary allocation to agricultural sector, and the effective utilization of these allocated funds, an effective and prudent management of monetary policies with concessionary low interest rate to encourage investment in the sector all proffered as recommendations to improve the agricultural sector.

Akomolafe, Danladi, Babalola & Abah (2015) carried out the impact of monetary policy on commercial banks' performance in Nigeria in a micro-panel analysis. Interest rate and money supply were used as proxies for monetary policy, while profit before tax (PBT) was used to represent commercial banks' performance. Pooled regression, Fixed effect regression, and random

effect regression were all carried out in the analysis. However, Hausman test revealed that fixed effect regression is the most appropriate. The results show that there is a positive relationship between banks' profits and monetary policies as proxied by money supply and interest rate. However, interest rate was not statistically significant at 1% and 5% levels. This study therefore recommends that interest rate policy should be looked into by the monetary authority in a way that is friendly to loan advancement in the country.

Apere & Karimo (2015) assessed the impact of monetary policy on bank credits to the Nigerian economy from 1981-2013. Data were obtained from the Central Bank of Nigeria records. A three variable unrestricted VAR (1) model involving banks' total credit to the economy, money supply and monetary policy rate was estimated. Pre-estimation results show all the variables to be integrated at first difference, I (1) but were not co-integrated. Further results show that money supply has an instantaneous influence on both monetary policy rate and banks' credit to the economy. Other results show that the direction of the reaction of money supply to a standard deviation structural monetary policy shock is not certain; money supply and banks' credit to the economy responded negatively to structural shocks in monetary policy rate; banks' credit to the economy responded positively to nominal structural shocks and; whereas money supply and banks credit to the economy responds positively to banking sector's reforms monetary policy rate's response is negative. The study concluded that short-run monetary policy in Nigeria is important in controlling interest rates and credit to the economy. It recommended that efforts should be geared towards strong banking sector reforms.

Ekpung, Udude & Uwalaka (2015) investigated the effect of monetary policy on banking sector performance in Nigeria. The study period covers 36 years from 1970 to 2006, using selected indicator and employing the OLS regression technique. Results showed that overall; monetary policy has a significant effect on the banks deposit liabilities. Main while, on individual basis, we discovered that Deposit Rate (DR) and Minimum Discount Rate (MDR) had a negative influence on the banks deposit liabilities in Nigeria, whereas Exchange Rate (EXR) had a positive and significant influence on the banks deposit liabilities in Nigeria. They concluded therefore that monetary policy plays a vital role in determining the volume of bank's deposit liabilities in Nigeria. The study recommends that government and its monetary authorities should strive to create a conducive environment for banking sectors to grow in the country by packaging appropriate monetary policies that would guarantee and enhance growth and development of the banking sectors in Nigeria.

Kyari (2015) assessed the effect monetary policy variables on savings, national income and investment as proxies to the real sector economy in Nigeria. The paper explores the significance of this channel using VAR model, as tests suggest the null hypothesis of no significant effect was rejected and a conclusion was drawn that one of the monetary variables such as money supply exert a significant impact on the real sector economy. The main implication to be drawn from these results seems to be the importance of monetary policy channel in regulating real sector economy in Nigeria. The effect of money supply shocks on real sector variables are similar and seem to be

significant too. Thus, with respect to this result, monetary policy regulators should use money supply regularly as a mechanism to improve real sector economy in Nigeria.

Ndugbu & Okere (2015) investigated the impact of monetary policy on the performance of deposit money banks – the Nigerian Experience (1993-2013). Data for this study were collected from the Central Bank of Nigeria (CBN) statistical bulletin, annual reports and statement of accounts. Ordinary Least Square and co integration were used to evaluate the impact of monetary policy on the performance of deposit money banks. The Augmented Dicker Fuller (ADF) unit root test and co integration proved that the variables are stationary and a long-run relationship exist among the variables The OLS revealed that amongst all the monetary policy variables (bank deposit rate, bank lending rate, cash reserve ratio and liquidity ration) considered in the model, only bank deposit rate has significant relationship though inverse relationship. On this premise, the study recommends among others, that the Central Bank of Nigeria (CBN) should moderate the deposit rate as a tool for regulating deposit money banks operation. Again, there is need to modify the monetary policy instruments to reflect and respond more rapidly and easily to local economic conditions**.**

Okonkwo, Godslove & Mmaduabuchi (2015) examined the impact of monetary policy variables on manufacturing in Nigeria from 1981 – 2012. The theoretical relationship between monetary policy variables and manufacturing sector (that is, the real sector) was critically examined and established in this study. Hence, the researcher specified four explanatory variables for this study based on theoretical underpinnings. The Johansen co-integration test was employed in order to establish long run equilibrium relationship between the explained and the explanatory variables. The error correction model (ECM) was employed to estimate the model. The study revealed that money supply and credit to private sector exert tremendous influence on manufacturing in Nigeria.

Udeh (2015) examined the impact of monetary policy instruments on profitability of commercial banks in Nigeria using the Zenith Bank Plc experience. The paper used descriptive research design. It utilized time series data collected from published financial statements of Zenith Bank Plc as well as Central Bank of Nigeria Bulletin from 2005 to 2012. Four research questions and four hypotheses were raised for the study. Pearson Product moment correlation technique was used to analyze the data collected while t-test statistic was employed in testing the hypotheses. The study discovered that cash reserve ratio, liquidity ratio and interest rate did not have significant impact on the profit before tax of Zenith Bank Plc. However, minimum rediscount rate was found to have significant effect on the profit before tax of the bank. The paper concluded that a good number of monetary policy instruments do not impact significantly on profitability of commercial banks in Nigeria. The paper recommended that management of commercial banks in Nigeria should look beyond monetary policy instruments to enhance their profits.

Nwoko, Ihemeje, and Anumadu (2016) examined the extent to which the Central Bank of Nigeria Monetary Policies could effectively be used to promote economic growth, covering the period of 1990-2011. The influence of money supply, average price, interest rate and labour force were tested on Gross Domestic Product using the multiple regression models as the main statistical tool

of analysis. Studies show that CBN Monetary Policy measures are effective in regulating both the monetary and real sector aggregates such as employment, prices, level of output and the rate of economic growth. Empirical findings from this study indicate that average price and labour force have significant influence on Gross Domestic Product while money supply was not significant. Interest rate was negative and statistically significant. It is therefore, recommended that Central Bank Monetary Policy could be an effective tool to encourage investment, reduce unemployment, reduce lending rate and stabilize the economy of Nigeria.

Ogbulu & Eze (2016) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria using the ECM and Granger causality techniques in addition to the IRF and VDC methodology. Data for the study were sourced from the CBN Statistical Bulletin and the Annual Reports and Accounts of the NDIC for the period 1989 to 2013. The findings of the study demonstrate that the selected credit risk management indicators under study significantly impact on the performance of deposit money banks measured as return on equity, return on total assets, and return on shareholders' fund respectively. However, the findings report no evidence of significant granger causality relationship between the various credit risk management indicators and the various measures of performance except for a uni-directional granger causality relationship from ROE to RNPD and from ROTA to RNPS respectively. Based on the foregoing, it recommended that given the observed significant relation between credit risk management and performance, deposit money banks in Nigeria should always pay particular attention to their credit risk management policies in order to significantly improve on the performance of these banks.

Ajibola, (2017) investigated the effect of monetary policy on the returns on risk assets; evidence of tier one banks in Nigeria. Eco Transnational bank and First Bank of Nigeria were used. The study ranges from 1986-2014, a period of 30 years. The Vector Auto-regressive (VAR) model was used to integrate the multi-variate time series. The variables used were; inflation rate, real interest rate, Treasury bill rate, loan to deposit rate for Eco bank and First bank, and the returns on asset for Eco bank and First Bank. Treasury bill rate was the only variable that was statistically significant. The regression showed that the dependent variables were responsible for half of the variations in the returns on assets. The estimated parameters were not significant in the regression model; thus, we can say monetary policy has a partial effect on the returns on assets of tier one banks in Nigeria. This could be as a result of lack of credibility in the Nigerian monetary policy system and lack of proper implementation. This study therefore recommends that the MPC needs to enforce their policies better so as to control the financial sector which is a main driver of economic growth and achieve their set objectives and targets.

3. Materials and Methods

3.1   Sources of Data

According to Burns & Grove (2005), data can be collected in several ways depending on the study and can include a variety of methods in as much as the research objectives are met. The data for

this analysis were collected from the CBN statistical bulletin and statement of account of various issues. The time series data covered the period of 1985 to 2020.

The data used include the following:

Dependent variables

Return on Equity: Return on equity is a measure of a company's ability to use its shareholders capital to generate sales or revenue, and is a calculation of the amount of sales or revenue generated per share capital.

Independent variables
i.   **Cash Reserve Ratio (CRR):** It is the ratio of cash reserve requirement to total current liabilities. This is the reserve requirement by the central bank to reduce or enhance the ability of commercial banks to make loans to the public by simply increasing or decreasing the ratio of cash in enhancing their lending position.
ii. **Liquidity Ratio (LR):** Liquidity ratio is the ratio of total specified liquid assets to total current liability.
iii. **Monetary Policy Rate (MPR):** This is the rate at which the central bank stands ready to provide loan accommodation to commercial banks. As a lender of last resort, such lending by the central bank is usually at panel rates. It determines the cost of lending rate of commercial banks. It is also an indicator of current development in the economy. The bank rate acts as a barometer of the economic situation in the country.

3.2   Model Specification

To specify monetary policy and bank performance model, the researchers first identified the variables and explained their roles in the models. The model specifications identified in hypothesis are:

H_0: There is no significant relationship between monetary policy instruments (Cash Reserve ratio, liquidity ratio, Monetary Policy Rate) and deposit money banks' return on equity.

Deposit money banks' return on equity $= F$ (CRR, LQR, MPR, μ)

$$ROE = b_0 + b_1 CRR + b_2 LQR + b_3 MPR + \mu$$

Where; Y= Return on Equity (ROE)
X_1= Monetary Policy Rate (MPR)
X_2= Liquidity Ratio (LQR)
X_3= Cash Reserve Ratio (CRR)
μ =unexplained variable

Apriori Expectation

(LQR, CRR) < 0; MPR) > 0

The effect of monetary policy tools such as cash reserve ratio, monetary policy rate (MPR), broad money supply (MSP) and liquidity ratio (LQR) on DMBs return on equity (ROE) is examined in the model. A positive relationship is expected between MPR and ROE since a higher MPR implies that banks will charge higher interest rate which will increase their revenue and return on equity. A negative relationship is expected between LQR, CRR and ROE as increase in these variables reduces banks liquid assets and capital as well as their use for investment or loan creation as noted by Ibeabuchi (2007).

4. Analysis and Discussion of Findings

This section made of Bank performance proxied by Return on Equity (ROE), and monetary policy variables (monetary policy rate (MPR), liquidity ratio (LQR), cash reserve ratio (CRR)). Obtained from Central Bank of Nigeria Statistical bulletin and NDIC reports from 1985 to 2020.

4.1 Stationarity test using Augmented Dicky Fuller (ADF) Unit root tes

Table 4.1 Summary of Unit Root Test

Variables	Unit Root Statistics at 1st difference	Order of integration
ROE	-7.278688	1 (1)
MPR	-6.883611	1 (1)
CRR	-4.718876	1 (1)
LQR	-7.527433	1 (1)
Critical values: 1%=-3.679322, 5%=-2.967767, 10%=-2.622989		

Table 4.1 presents the summary results of the Unit root tests carried out on the variables of our model. From the table, it is evident that CRR, LQR, MPR, and ROE are integrated of order 1 meaning that they become stationary after the first difference.

4.2 Estimation of Model using Regression Analysis
Table 4.2: OLS Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.57769	41.72511	0.517139	0.6094
CRR	4.073778	1.862701	2.187027	0.0379
LQR	0.154920	0.662186	0.233952	0.8169

MPR	-0.210469	1.842885	-0.114207	0.9100
R-squared	0.401777	Mean dependent var		36.41516
Adjusted R-squared	0.309743	S.D. dependent var		34.88381
S.E. of regression	28.98206	Akaike info criterion		9.717921
Sum squared resid	21838.96	Schwarz criterion		9.949210
Log likelihood	-145.6278	Hannan-Quinn criter.		9.793315
F-statistic	4.365518	Durbin-Watson stat		1.577625
Prob(F-statistic)	0.007820			

The result in the table 4.2 shows that CRR has positive and significant relationship with ROE. The R^2 at 40.12% indicates that the variables are poorly fitted. The t-Statistics shows that t-cal for MPR is -0.114207 with a prob.value of 0.9100 while the prob-value of LQR is 0.8169 which indicates that MPR and LQR have no significant relationship with return on equity. CRR has prob.value of 0.0379 which implies CRR has significant relationship with ROE. The adjusted R^{-2} found to be 30.97% implies that the independent variables are responsible for 30.97 variation found in ROE. The F-Statistics is 4.365518 with a Prob. value of 0.007820 implying that the overall regression is statistically significant and accept the alternative hypothesis that there is significant relationship between monetary policy instruments (Cash Reserve ratio, liquidity ratio, Monetary Policy Rate, money supply) and deposit money banks' return on equity. However, the D-W statistic is 1.577625 which shows no presence of auto-correlation in the model.

5. Conclusion and Recommendations

5.1 Conclusion

In the analysis carried out, OLS result indicates that CRR has positive relationship with return on equity while LQR and MPR insignificant relate with ROE. This implies that when the rates of MPR increases it could not affect the return on equity. It could suggest that most of the bank's equity are not significantly affected by CBN activities rather what the deposit money banks do with their earnings and quality of their returns since studies such as Okpara (2009), Solomon (2016) have earlier found that most banks declare unearned profits and sugarcoat their equities to attract more investors. Okpara (2010) had also found that the return on equity of banks have been relatively poor especially after each recapitalization process. Thus, the implication of our present study is that most of the banks' returns are not determined by monetary policy instruments studied by this study.

From the foregoing findings, the strength of monetary policy was found to lie on the combination of the various instruments, an implication that CBN needs to strengthen the effectiveness of its instruments.

5.2 Recommendations

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

i. Findings emanating from the empirical analysis of this study proffered that monetary authority; the Central Bank of Nigeria (CBN) should moderate its monetary policy instruments to ensure their effectiveness on deposit money banks.

ii. The liquidity ratio and monetary policy rate should be reviewed, readjusted in a way that it targets bank deposits as high liquidity in the banking industry makes these instruments less effective.

iii. Effective monitoring of banks loans performance should be carried out while toxic assets should be followed up prompting to reduce cases of loss loans and assets.

5.3 Suggestions for Future Studies

Following the scope of this present study using instruments such as monetary policy rate, cash reserve ratio and liquidity ratio; there is need for further research on the instruments not reviewed in this study for better assessment of the effectiveness of monetary policy on bank performance.

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