

## Monetary Policy and Credit Delivery in Commercial Banks – Evidence from Nigeria

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### **Abstract**

*The study embarked on finding out the effect and to what extent monetary policy instruments on credit delivery by banks. The problem of study is that high toxic assets remains high despite the policies placed over time thus questioning the effect of monetary policy on banks asset quality and returns. The objective of study in trying to evaluate the factors responsible for bank performance in Nigeria the research objective is to determine the level of effect of monetary policy-money supply, liquidity ratio; cash reserve ratio and monetary police rate on commercial banks credit delivery. The literature review contains the conceptual, theoretical and empirical review of the area of study. In the methodology of study, the data utilized include Cash Reserve Ratio (CRR), Turnover ratio, Liquidity ratio, Monetary Policy Rate (MPR), Money Supply (MS), Bank Assets and Loans and Advances (TLA). The study also used the ordinary least square (OLS) since it enabled the researcher to capture the essence of the work effectively in addition to its high level of simplicity and global acceptability. Moreover, a 5% confidence level is adopted for the study. The MPR, MSP and CRR have positive relationship with LADV. That is, the higher the MPR, MSP and CRR, the higher the LADV. However, LQR has negative relationship with LADV.*

*The  $R^2$  at 98.27% indicates that the variables are strongly fitted which was also confirmed by the adjusted  $R^2$  found to be 98.0%. The t-test shows that t-cal for MPR is 0.176764 while its prob-value of 0.8608 is significant at 5% confidence level leading to the rejection that there is significant relationship between monetary policy rate and bank loans and advances. The t-cal for MSP is 30.01694 with a prob-value of 0.000 that is insignificant at 5% confidence level leading to the acceptance that there hence acceptance that there is significant relationship between money supply and bank loans and advances. The t-cal for LQR is -0.090313 with a prob-value of 0.9289 that is significant at 5% confidence level leading to the rejection that there is significant relationship between liquidity ratio and bank loans and advances. The t-cal for CRR is 0.861385 with a prob-value of 0.3956 that is significant at 5% confidence level leading to the rejection that there is significant relationship between cash reserve ratio and bank loans and advances. In the parsimonious error correction model the test shows that ( $R^2$ ) is 57% implying a fairly fitted relationship between the variables and bank loans and advances. The Adjusted  $R^2$  is approximately 48% also shows that 48 percent of changes in bank loans and advances, was jointly explained by MSP and CRR. The Error-correction coefficient of -0.431995 has the right sign (negative) and shows that 43%*

*deviation from equilibrium is corrected annually. Also, the F-statistic with 0.0009 probability level indicates that the overall regression is significant at 5% confidence level. It is the conclusions of the researchers that monetary instruments can work better in the Nigerian banking industry if all the variables can be made to be effective as a combined effect of all the instruments of bank regulations will tend to give a better result. In our analysis, it was discovered that the observed impact of monetary policy instruments on bank performance was instrument sensitive. From the findings, the Liquidity Reserve Ratio (LRR) tends to impact more on bank turnover ratio. Because monetary effects of CRR changes are hard to be isolated from those of other policy measures. It means that the constraint of higher reserve requirements on bank lending seems more binding when initial excess reserves shrink below some threshold, restraining the subsequent loan expansion while leading to higher, more volatile market interest rates. The CBN should carefully and thoroughly consider the turnover effect in deciding the LRR.*

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### **1.0 Introduction**

The existence of an effective banking sector is necessary for every economy because it creates the necessary environment of economic growth and development through its role in intermediating funds from surplus sector to deficit sector of the economic units. Banking sectors are financial intermediaries whose activities are for collection of savings and lending, thus standing in between the ultimate lender and the borrower and matching the investment requirement of the lender. This stimulates investment as well as international trade and balance of payments. 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 in order to influence financial and economic activities (Ekpung, Udude & Uwalaka, 2015).

Monetary policy is one of the major economic stabilization weapons which involve measures designed to regulate or control the volume, cost, availability and direction of money and credit in an economy to achieve some specific macro-economic policy objectives. In the opinion of Onouorah, 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.

The banking industries in any economy in the world are 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 fund 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.

In order to make profit, commercial banks invest customer deposits in various short term and long term investment outlets; however core of such deposits are used for loans. Hence, the more loans and advances they extend to borrowers, the more the profit they make (Solomon, 2012). Okpara (2009) opined that banks in most economies are the principal depositories of the public's financial savings, the nerve centre of the payment system, the vessel endowed with the ability of money creation and allocation of financial resources and conduit through which monetary and credit policies are implemented. From Okpara's perspective, the success of monetary policy, to a large extent, depends on the health of the banking institutions through which the policies are implemented. As a result of this central role of banks in the economy, their activities have to be kept under surveillance to ensure that they operate within

the law in line with safe and sound banking practices so that the economy will not be jeopardized. Hence, governments generally legislate to influence and/or directly control banks' activities to suit the developmental objectives of the economy.

In Nigeria, the authority to carry out monetary policy is vested in the Central Bank of Nigeria (CBN) through decrees 24 and 25, 1991. These laws, which replaced previous legislation on the matter, enjoin the CBN, under the guidance of the federal government to promote monetary stability and a sound financial system. CBN initiates monetary and banking policies and sends the proposal to the government for amendment, approval or rejection as noted by Ayogu and Emunuga (2009).

Prior to 1986 direct monetary instruments such as selective credit controls, administered interest and exchange rates, credit ceilings, cash reserve requirements and special deposits to regulate the banking system were employed. The fixing of interest rates at relatively low levels was done mainly to promote investment and growth. Occasionally, special deposits were imposed to reduce the amount of excess reserves and credit creating capacity of the banks (Uchendu, 2009 & Okafor 2009). In the words of Ologunde, Elumilade, & Asaolu (2006), interest rate along with monetary aggregates formed targets of monetary policy in Nigeria.

The major objectives of monetary policy since 2002 till 2014 have been to subdue inflation to a single-digit level and maintain a stable exchange rate of the naira (CBN, 2014). 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 in Nigeria and its impact on banking performance in Nigeria.

### **1.1 Statement of research problem**

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 and Udeh, 2009; Okpara, 2010; & Solomon, 2013). 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. According to Sanusi (2011), 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.

### **1.2 Research Objectives**

In trying to evaluate the factors responsible for bank performance in Nigeria the research objective is to determine the level of effect of monetary policy-money supply, liquidity ratio, cash reserve ratio and monetary police rate on commercial banks credit delivery.

### **1.3 Research Hypothesis**

H<sub>0</sub>: Monetary policy instruments-money supply, liquidity ratio, monetary policy rate, cash reserve ratio- have no significant influence on commercial banks credit delivery.

### **1.4 Significance of study**

The study is essentially of fundamental interest to the monetary authorities since the failure or success of monetary policy is vital to policy makers hence studies like these can be of help to policy makers especially since Nigeria's economy is an emerging one. Again researchers in the academia will find this study useful especially for those who are studying the economic and financial happenings in Nigeria.

### **1.5 Scope of Research**

The focus of the research is to study monetary policy implementations in Nigeria's banking sector for a period of 26 years (1980-2015).

## **2.0 Literature Review**

Because of the banks strategic and systematic role in the transformation of a developing economy like Nigeria into a modern industrial society many scholars have devoted time towards this study. This sector contributes immensely to economic growth and development of every nation by channeling financial surplus resources into productive investment. Hence, it is obvious that without these sectors a country's domestic economy would have been characterized and limited to a barter economy, which is clearly an ineffective and inefficient system because markets cannot develop nor can specialization take place (Onoh, 2002).

This is also informed by the fact that the main aim of bank is to seek profit like any other institution. Its capacity to earn profit depends upon its investment policy, in turn, depends on the nature and manner in which it manages its investment portfolio. Thus, commercial bank investment policy emerges from a straight forward application of the theory of portfolio management which refers to the prudent management of a bank's assets and liabilities in order to seek some optimum combination of profit, liquidity and safety. Of all assets of commercial banks, the loan portfolio appears to be the most important to the public, the government and the bank itself. When a bank operates, it acquires and disposes off income-earning assets. These assets plus the banks cash makes up what is known as its portfolio, (Jhingan, 2004). Hence, these manipulations can have important effects on the monetary policy, on the borrowing and spending practices of household, businesses and on the economy as a whole. However, through the monetary policy guideline of the Central Bank of Nigeria (CBN) which is made public or available to banks annually or periodic gives a clear-cut directives on the extent to which commercial banks can create credit. The Central Bank of Nigeria (CBN) by law controls and supervises the activities of other banks (Deposit Money) with Open Market Operation (OMO), discount rate policy (DRP), reserve requirement rate (RRR), minimum rediscount rate (MRR), minimum liquidity ratio (MLR) and even Loan to

Deposit Ratio (LDR). To ensure a stable domestic monetary environment, CBN exercise control over the deposit of banks and tendency to increase size as well as the level of money supply. This chapter thus reviews relevant literatures as pertaining monetary policy, monetary policy theories, commercial banks and the relationship between monetary policy and commercial banks performance.

## 2.1 Theoretical Literature Review

Onyeiwu (2012) the banking sector like other sectors in the economy has different transmission channels through which banking and economic activities operate.

### 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 lay 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 (Diamond, 2003). The classical school evolved through concerted efforts and contribution of economists like Jean Baptist Say, Adam Smith, David Richardo, Pigu 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 were of the opinion that the quantity of money determines the aggregate demand which in term determine the price level (Amacher & Ulbrich, 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 (Onouorah, Shaib, Oyathelemi, & Friday, 2011). According to the theory, the role of government was providing a system of laws and security to protect private property, as well as providing a stable financial and monetary framework (Onouorah, Shaib, Oyathelemi, & Friday, 2011). Theory posit 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, 2013). The economic depression of the 1930s 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,

$$MV=PT \dots\dots\dots (1)$$

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).

### **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 P. 90) 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 multiplies process (Amacher & Ulbrich, 1989; Gertler & Gilchrist, 1991; Okpara, 2010; & Solomon, 2013). Keynes posit 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, 1956, 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:

$\downarrow \text{OMO} \rightarrow \downarrow R \rightarrow \uparrow \text{MS} \rightarrow \downarrow r \rightarrow I \rightarrow \downarrow \text{GNP}$

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, 2005:415 – 416).

### **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 (1968: 1-17), 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 the quantity theorist 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 (Essia, 1997). Monetarists like Friedman (1956, 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:

$\uparrow \text{OMO} \rightarrow \uparrow \text{MS} \rightarrow \text{Spending} \rightarrow \uparrow \text{GNP}$

The monetarist argument centres 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), (M. L. Jhingan, Monetary Economics 6th Edition, P. 418 – 419).

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 an expansive open market operation 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 organisations 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, p.90). 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 & Rudebusch (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 decline 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 industrialised 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, 2013). 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.

## 2.2 Conceptual Framework

Ezenduyi (1994) defines monetary policy as the policy which involve 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 mapping 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). Onouorah, Shaib, Oyathelemi, & Friday (2011) define monetary policy as a rule and regulation imposed by the monetary authority into controlling the money supply inflation and achieves economic growth. Onyeiwu (2012) defines monetary policy as a technique of economic management to bring about Sustainable economic growth and development has 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 instrument tools of monetary policy have been classified broadly in two categories. Quantitative instrument: Traditional and non-traditional quantitative instrument (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 capital 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 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).

### Monetary Policy Instruments

The instruments of monetary policy can be categorized into two namely: (Ibeabuchi, 2007)

1. Direct or quantitative instruments
2. Indirect or qualitative instruments

### Direct Instruments or Qualitative 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 directives 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 appeal the monetary authority sometimes uses the less tangible technique to influence the lending policies of commercial banks (Ibeabuchi, 2007). Consequences to the banking system and the economy as a whole, 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, 2013). With the leaders in the banking community – such contracts are geared towards the development of confidence between the central bank and other banks. It affords the central bank 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 course of the government’s programme to revitalize agricultural production which is the most favoured sector, credits to the favoured sector is at lower interest rate while the least favoured sectors pay the highest rate of interest (Ibeabuchi, 2007).

5. **Direct Credit Control:** According to CBN (2013), 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, 2013). Key elements of prudential guidelines remove some discretion from bank management and replace it with rules in decision making (Ibeabuchi, 2007).

### **Indirect Instruments or Quantitative Instruments of Monetary Policy**

Fiduciary or paper money is issued by the Central Bank on the basis of computation of estimated demand for cash (CBN, 2013). 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 banking sector. The commonly used instruments are discussed below (CBN, 2011):

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, 2013; Ibeabuchi, 2007; Ojo, 1993; & Solomon, 2013).
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, 2013).
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). 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, 2013; & 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, 2004).
5. **Rediscount Rate:** The rediscount rate is the rate at which the central bank stands ready to provide loan accommodation to commercial banks (CBN, 2013). 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 make 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, 2013). 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.

### **Monetary Policy and Economic Growth**

Monetary Policy is a key component of any pro-growth economic system and much so in developing economies such as the Nigerian Economy (Taylor, 2004). In general terms, monetary policy refers to a combination of measures designed to regulate the value, supply and cost of money in an economy in consonance with the expected level of economic activity (Nnanna, 2001). For most economies, Nigerian economy inclusive, the objectives of monetary policy includes price stability, maintenance of Balance of Payments equilibrium, promotion of employment and output growth.

Gbosi (2002), posits that monetary policy aims at controlling money supply so as to counteract all undesirable trends in the economy, these undesirable trends may include; unemployment, inflation, sluggish economic growth or disequilibrium in the Balance of Payments. Monetary policy may either be expansionary or restrictive. An expansionary monetary policy is designed to stimulate the growth of aggregate demand through increase in the rate of money supply thereby making credit more available and interest rates lower. An expansionary monetary policy is more appropriate when aggregate demand is low in relation to the capacity of the economy to produce goods and services.

On the contrary, if the quantity of money is reduced or restricted, money income will rise slowly so that consumers spend less and funds for investment are difficult to acquire thereby decreasing aggregate investment (restrictive monetary policy) (Imoisi, Olatunji, & Ekpenyong, 2013).

Nnanna (2001) observed that the pursuit of price stability invariably implies the indirect pursuit of objectives such as Balance of Payments (BOP) equilibrium. Anyanwu (1993) posits that an excess supply of money in the economy will result to excess demand for goods and services and in turn causes rise in prices and also, affect the Balance of Payments position. With the achievement of price stability, the uncertainties of general price level will not materially affect consumption and investment decisions. Rather, economic agents will take long-term decision without much reservation about price change in the macro-economy. The condition in the financial markets and institutions would create a high degree of confidence, such that the financial infrastructure of the economy is able to meet the requirements of market participants (Nkoro, 2003). In other words, an unstable and crisis-ridden financial system will render the transmission mechanism of monetary policy less effective, making the achievement and maintenance of strong macroeconomic fundamentals difficulty.

Akomolafe, Danladi, Babalola & Abah (2015) noted that as a stabilization policy, monetary policy involves the use of monetary instruments to regulate or control the volume, cost, availability and the direction of money and credit in an economy to achieve some specific macroeconomic policy objective. According to Onouorah, Shaib, Oyathelemi, & Friday (2011), it is a deliberate attempt by the monetary authority (Central Bank) to control the money supply and credit condition in the economy so as to achieve certain economic objective. Some of the macroeconomic objectives include price stability, full employment, sustainable economic growth, balance of payment equilibrium. The monetary instruments include bank rate, open market operation, reserve requirements etc. Economic activities are not directly affected by monetary policy instruments; they work through their effects on the financial markets. It affects economic activities through its effects on available resources in the banking sector (Akomolafe, Danladi, Babalola & Abah, 2015).

### **Banks and Financial Intermediation Role**

The role of the banking sector in the economic development of a nation cannot be overstressed. It is the channels through which idle funds are made available to the productive sector, thereby facilitating the use of surpluses in the economy to generate employment and promote economic welfare. The banking sector provides strong confidence for depositors, thereby motivating and encouraging saving in the economy. A strong financial sector also helps to sustain an economy against external shock that may arise from fall in external capital flow. A strong and well-developed financial sector is needed to achieve a sustained growth (Aurangzeb, 2012). Also, Akomolafe (2014) opined that sustainable economic growth is often associated with countries with strong financial sector. The recent incidence of banking and financial crises in the world, and its aftermath on the world economies gives credence on the importance of the sector on the performances of an economy. More importantly, the banking sector also serves as the avenue through which the monetary policies of the government are carried out.

Capital accumulation in any economy depends on the roles of the banks which include the following (Oyetayo & Oladipe 2010):

- 1. Offering Liquidity:** Liquidity in banking refers to assets that can easily be converted into cash. Money in the form of cash is regarded as the most liquid asset in the banking industry. Historically, the existence of banks is credited to this unique function of providing liquidity to people and comparative bodies to carry out their daily business activities. In order to perform this role banks offer saving, deposit and current account facilities to the public. When a customer decides to operate an account, and pay a minimum amount deposited on the various account is held by the banks, the liability, in addition to thus, banks help in keeping other convertible equities, like certificate of occupancy, share certificates, deeds of conveyance, etc. The bank is therefore requested by law to make a certain percentage of their deposit liabilities and capital funds capital to the general public to meet customer demand.
- 2. Payment Service:** A bank is under obligation to pay back to the customer any amount as specified by the customer according to the value of the account held. A bank customer may also want this cheque cashed up to a stated amount and within a specified period, at another branch of the bank or another bank. Conversely, the customer can also receive money through the bank when a debtor has decided to pay from a distance with crossed or open cheque.
- 3. Lending Function:** The deposit kept in banks need not be left idle because from experience banks are aware that depositors at a time. It is therefore prudent of the

banker lend such money to investors at a higher note which brings some revenues to them. They achieve this through overdraft loan, bills discounting or through direct investment.

4. **International Trade Services:** Banks help to provide the link through which payments for goods and services brought or sold by importers and exporters can be settled. In addition to this, they provide guarantee to exporters which need such guarantees before they can release them.
5. **Currency Transaction:** Banks trade on foreign currencies; especially U.S. dollars are pound sterling. They engage competitively in foreign currency transaction as it provides them a significant source of revenue. However, foreign exchange transaction loans in every country are very stringent.
6. **Performance Bond Services:** A performance bond is used on behalf of customers in the real sector of the economy where they are required to supply the bond before they can tender for contract. The bond guarantees that the company has adequate financial resources to execute the contract successfully. When a bank gives such a guarantee it usually takes an indemnity from the customer so that it can claim against him in case of default (Oyetayo & Oladipe 2010).

### **Monetary Policy and Banks Financial Intermediation**

Liquidity is essential for the banking sectors. Liquidity as opined by According to Nwankwo (1991:12), is what keeps the doors of a bank open. To Nwankwo, adequate liquidity enables the bank to find new funds to honour maturity obligations and enables the bank generate and sustain public confidence in the solvency of the banks. Adequate liquidity helps a bank avoid forced sales of assets and prevent a bank from involuntarily borrowing from the Central Bank.

Sources of bank liquidity can be in form of stored liquidity, which consists of assets in form of values and balance at Central Bank. As increase in the required liquidity ratio necessarily reduces the profitability rate of banks since they would have to hold some of their assets in treasury bills and certificates, the return which are quite below those of other money markets instruments, loans and advances (Ekpong, Udude & Uwalaka, 2015). Emphasizing liquidity, Soyode & Oyejide (1986:125) said a banks' portfolio must contain enough cash and assets so that the bank will be able to meet all possible vast demands that the depositors might make for cash payment. A potential source of liquidity is the ability of bank to borrow. By all standards, banks liquidity is very essential. As Efoagui (1985:7) as cited by Ekpong, Udude & Uwalaka (2015) puts it, "the whole edifice of banking is built upon confidence in the liquidity of banks".

### **Monetary Policy Implementation and Banks Performance in Nigeria**

In Nigeria, the Central Bank of Nigeria (CBN) is the sole monetary authority. Its core mandate is to promote monetary and price stability and evolve an efficient and reliable financial system through the application of appropriate monetary policy instruments and systemic surveillance (Ibeabuchi, 2007). The 1958 Act establishing the Central Bank of Nigeria gave it the following specific functions (which have endured in the 2007 CBN Act):

1. issuance of legal tender currency notes and coins in Nigeria;
2. maintenance of Nigeria's external reserves;
3. safeguarding the international value of the currency;
4. promotion and maintenance of monetary stability and a sound and efficient financial system in Nigeria; and
5. Acting as banker and financial adviser to the Federal Government.

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### **Era of Direct Control (Pre-SAP Period)**

In 1892, there was a new dimension in credit delivery as the first commercial bank came into operation (Nnanna, 2001). However due to discrimination of the early banks mainly foreign owned (First Bank and Union Bank then known as British Bank of West Africa and Barclays bank (Nigeria Limited respectively) against Nigerian customers who they considered as high credit risk, indigenous banks sprang up in 1929. The first was industrial and commercial bank followed by the Nigeria mercantile bank in 1931. Others include the Nigerian Penny Bank, the Nigeria farmers and Commercial banks, Merchant banks, Pan Nigerian bank among others. The purpose of their establishment was to grant credit to indigenous borrowers since then various banks have emerged in Nigeria (Solomon, 2013). Folawewo & Osinubi (2006) posit that during the first half of 1980s, CBN's reserves relative to domestic credit witnessed continual decline, it however started to increase from 1986 up till 1990.

### **Period of Indirect or Market Approach (Post-SAP Era)**

In line with the economic deregulation embodied in the SAP, there was a paradigm shift from the hitherto repressive direct monetary control method to an indirect approach anchored on the use of market instruments in monetary management (Nnanna, 2001). According to CBN report (2001), this was borne out of the desire to eliminate the distortions and inefficiencies in the financial system caused by the prolonged use of administrative controls and the need to engender competition among banks and other operators in the financial system.

Two major policy regimes of short- and medium-term frameworks can be identified.

### **Regime of Short-Term Monetary Policy Framework (1986-2001)**

Consistent with the broad objectives of monetary policy, a number of monetary targets and instruments were adopted during the short-term (one-year) monetary policy framework (1986-2001) (CBN, 1993; Ibeabuchi, 2007; & Ojo, 1993). OMO, conducted wholly using the Nigerian Treasury Bills (NTBs), continued to be the primary instrument of monetary policy. This was complemented by the cash reserve requirement (CRR) and the liquidity ratio (LR). Other policy instruments employed included the discount window operations, mandatory sales of special NTBs to banks and a requirement of 200 percent treasury instrument to cover for banks' foreign exchange demand at the Autonomous Foreign Exchange Market (AFEM). Interest rate policy was deregulated through the proactive adjustment of minimum rediscount rate (MRR) to signal policy direction consistent with liquidity conditions. Surveillance activities of the CBN focused mainly on ensuring sound management and maintenance of a healthy balance sheet position on the part of deposit money banks (DMBs). On the external front, the official and inter-bank exchange rates were unified in 1999 (Ibeabuchi, 2007; Ngugi, 2001; & Obidike, Ejeh and Ugwuegbe, 2015).

Amassoma, Wosa & Olaiya (2012) opine that the adoption of Structural Adjustment Program (SAP) in Nigeria, offered a sea of policy change in monetary policy development in Nigeria. The deregulation exercise in the financial system, led to the establishment of two foreign exchange markets in 1986. In 1987 Interest rate controls completely removed, bank licensing liberalized and the foreign exchange markets unified.

In 1988, foreign exchange bureaus established, bank portfolio restrictions relaxed and the Nigerian Deposit Insurance Corporation was established. In 1989, banks were permitted to pay interest on demand deposits, the auction markets for government securities was introduced, the capital adequacy standards were reviewed upward and the extension of credit based on foreign exchange deposits was banned (Nnanna, 2001).

In 1990, the risk-weighted capital standard was introduced and banks' required paid-up

capital increased. Also in 1990, a uniform accounting standards was introduced for banks while a stabilization security to mop up excess liquidity was also introduced (Nnanna, 2001). In 1991, there was an embargo on bank licensing while the administration of interest rate was introduced. Also the Central Bank was empowered to regulate and supervise all financial institutions in the economy (Ibeabuchi, 2007).

In 1992, the interest rate controls removed once again while the privatization of government-owned banks commenced. More so, capital market deregulation commenced, credit control was dismantled while the foreign exchange market was reorganized. In 1993, indirect monetary instruments were introduced while in 1994 the interest and exchange rate controls were re-imposed (Guseh & Oritsejafor, 2007; & Ikhide & Alawode, 1993).

### **Regime of Medium-Term Monetary Policy Framework (2002-2005)**

Ibeabuchi (2007) noted that in 2002, the CBN commenced a two-year medium-term monetary policy framework, aimed at freeing monetary policy from the problem of time inconsistency and minimizing over-reaction due to temporary shocks. The new monetary policy framework, still in operation, is based on the evidence that monetary policy actions affect the ultimate objectives with a substantial lag. According to CBN (2010) publication, under the framework, monetary policy guidelines are open to half-yearly review in the light of developments in monetary and financial market in order to achieve medium- to long-term goals.

The major objectives of monetary policy since 2002/2003 have been to subdue inflation to a single-digit level and maintain a stable exchange rate of the naira (CBN, 2010). CBN report shows that attention was also focused on the need for a more competitive financial sector geared towards improving the payments system. The OMO continued to be the primary tool of monetary policy, and is complemented by reserve requirements, discount window operations, foreign exchange market intervention and injection/withdrawal of public sector deposits in and out of the DMBs (CBN, 2010). 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 minimum capital bases for DMBs) (CBN, 2010).

The 2004/2005 monetary policy and credit guidelines were fine-tuned in 2005 in the light of changing environment (Soludo, 2004). New policy measures introduced included maintenance of a tight exchange rate band of plus/minus 3 per cent, two week maintenance period of cash reserve requirement and the injection/withdrawal of public sector deposits from the DMBs. The various measures put in place, complemented by improved fiscal discipline at the federal government level, impacted positively on the monetary aggregates in 2004 and 2005, resulting in the achievement of set targets during the period. The growth rate of real GDP also increased substantially, exceeding set targets in 2003-2005 (Ibeabuchi, 2007).

In 2005, the minimum paid up capital was further raised to ₦25 billion naira for all commercial banks in accordance with the recapitalization exercise (Soludo, 2006). In 2006, the Central Bank of Nigeria introduced a new monetary policy implementation framework (Monetary Policy Rate {MPR}) to replace the Minimum Rediscounted Rate (MRR). Specifically, this is done to dampen the volatility of interest rate in money market and stimulate a transaction rate that would improve the transmission of monetary policy actions

(CBN, 2010).

### **Monetary Policy Implementation Post-Consolidation (2006-date)**

The key feature of the monetary conditions during the period according to CBN (2013) document on monetary policy implementation shows that 2006/07 policies include:

1. Zero tolerance on ways and means advances;
2. Gradual run-down of CBN holding of TBs;
3. Aggressive liquidity mop-up operations-frequent OMO sales supported by discount window operations;
4. Unremunerated reserve requirements;
5. Increased coordination between the Bank and the fiscal authorities;
6. Restructuring of debt instruments into longer tenor debts;
7. Increased deregulation of forex market; and
8. Occasional forex swap.

### **Post Financial Crisis**

During the 2009 global financial crisis and owing to the high level of toxic assets recorded in banks assets, CBN adopted measures to regulate banks balance sheets, credit creation and means of reporting financial statement. Monetary policy adopted during this period includes securitization, *credit guideline, liquidity ratio, open market operation, reserve ratio, monetary policy rate, amongst others.*

On the reasons for the adoption of the monetary policies above, Alford (2011) noted that aggregate percentage of nonperforming loans of the five banks was 40.81 with chronic borrowing at the Expanded Discount Window (EDW) of the CBN, indicating that they had little cash on hand). On August 14, 2009, the CBN declared the five banks as insolvent.

The erstwhile CBN Governor, Sanusi Lamido argued that eight factors caused the Nigerian financial crisis: “macroeconomic instability caused by large and sudden capital inflows, major failures in corporate governance at banks, lack of investor and consumer sophistication, inadequate disclosure and transparency about the financial position of banks, critical gap in regulatory frameworks and regulations, uneven supervision and enforcement, unstructured governance and management processes at the CBN/weaknesses within the CBN, and weaknesses in the business environment” (Alford, 2011) .

According to Sanusi (2020), the monetary policy for its regime was to check indiscriminate loan creation by banks, high level of non-performing loans, beautification of banks balance sheet, control inflation, control high volume of money supply, instil confidence of customers on banks, increase bank credit creation and make them more responsive to the financial needs of small and medium scale industries, make the banks more competitive globally, increase banks capacity to handle international transactions and huge investment amongst others.

To achieve this, CBN established asset management corporation (ASCOM) to constantly review banks balance sheet and limit the exposure of banks to non-performing loans (Sanusi, 2011; & Solomon, 2013). The Central Bank of Nigeria (CBN) also issued know your customer (KYC) policy, anti-money laundering, counter financing of terrorism, loan loss provisioning, peculiarities of different loan types and financing different sectors of the economy, among others. In the new risk management guidelines, the CBN directed banks to prepare comprehensive credit policy duly approved by their Board of Directors, and that the policy should among others cover loan administration, disbursement and appropriate monitoring mechanism and should be reviewed at least every three years. The new guideline stipulated that the tenure of external auditors in a given bank shall be for a maximum period

of 10 years from date of appointment after, which the audit firm shall not be reappointed in the bank until after a period of another 10 years (Sanusi, 2010).

Interest rates in all segments of the money market reflected the liquidity conditions in the banking system. At the MPC meeting of November 18- 19, 2013, the Monetary Policy Rate (MPR) was retained at 12.00 per cent with a symmetric corridor of +/- 200 basis points, thus effectively maintaining the SLF and SDF rates at 14.00 and 10.00 per cent, respectively. Alongside the existing Cash Reserve requirement (CRR) of 12.0 per cent, the 50.0 per cent CRR on public sector deposits was retained to address excess liquidity in the banking system. Consequently, both the weighted average inter-bank call and OBB rates opened at 11.73 per cent in December 2014 (CBN, 2014).

Banking system deposits at the CBN deposit facility was consistently been high. Even with OMO operations, Interbank and OBB rate still traded below the standing deposit facility rate at 10.54 per cent and 10.23 per cent respectively as at December, 2014. However, lending rates remained high at over 23 per cent, suggesting that care must be taken to manage the structural liquidity and the structural impediments to credit growth. In addition, pressure on the exchange rate window is impacting the foreign exchange reserves negatively (CBN, 2014). Therefore, a balance between defending the naira and saving the reserve must be struck for economic stability.

### **2.3 Empirical Studies**

As a front runner, Odufalu (1994) bases his study mainly on the effect of monetary policy on banks profitability in Nigeria. He developed a model of bank profitability, which had profit before interest and tax as the dependent variables. While the independent variables include, average interest rate on savings and time deposits, prime lending rate for loans and advances, treasury bills rate, total deposit, liquidity ratio, cash and income. He also used pooled data for only twelve commercial banks from 1986 to 1990 periods and estimated the model using the ordinary least square (OLS) estimation method.

Ogunleye (1995) in his own submission criticized and questioned Odufalu's use of certain variables in his model, for example, lending rate is one aspect of interest rate and thus, making its inclusion among the explanatory variables questionable.

Ogbulu & Torbira (2012) investigate 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.

### **3.0 Research Methodology**

This study made use of quasi-experimental survey which involves observation of the variable without intentional manipulation. This was used because the study focused on time series of events and correlation between two or more economic variables. Burns & Grove (2005), believed that 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 utilized include Cash Reserve Ratio (CRR), Turnover ratio, Liquidity ratio, Monetary Policy Rate (MPR),

Money Supply (MS), Bank Assets and Loans and Advances (TLA).

### 3.1 Model Specification

H<sub>0</sub>: Monetary policy instruments-money supply, liquidity ratio, monetary policy rate, cash reserve ratio- have no significant influence on commercial banks credit delivery.

Banks loans and advances = F (money supply, liquidity ratio, monetary policy rate, cash reserve ratio  $\mu$ ) ..... iii

Where; Y= Banks loans and advances (TLA)

X<sub>1</sub>= Monetary Policy Rate (MPR)

X<sub>2</sub>= Broad Money Supply (MSP)

X<sub>3</sub>= Liquidity Ratio (LQR)

X<sub>4</sub>= Cash Reserve Ratio (CRR)

$\mu$  =unexplained variable

(MSP, LQR, MPR, CRR)>0 LOG(LADV) LOG(MPR) LOG(MSP) LOG(LQR) LOG(CRR)

Thus, a negative relationship is expected between MPR, LQR, CRR and bank credit as the increase in these instruments hampers banks' ability to create more loans and advances. However, money supply is expected to impact positively on banks loans and advances as they are able to create more credit from the more money in circulation. This is in line with studies of Ndugbu & Okere (2015); Okoye & Eze (2013), & Udeh (2015).

### 3.3 Method of Data Analysis

This study employed secondary data obtainable from the Central Bank of Nigeria (CBN) Statistical Bulletin. Furthermore, this research work employed multiple regression method/model as econometric technique in estimating the relationship between monetary policy and bank performance proxy by loans and advances, assets and turnover ratio. The study also used the ordinary least square (OLS) since it enabled the researcher to capture the essence of the work effectively in addition to its high level of simplicity and global acceptability. Moreover, a 5% confidence level is adopted for the study.

OLS became imperative for use in this work as the theoretical foundation for this procedure is well highlighted in many articles of Akanbi & Ajagbe (2012), Amassoma, Wosa & Olaiya (2011); Ekpung, Udude & Uwalaka (2015); Okoye & Udeh (2009), & Olokoyo (2012).

The study also employed the unit root (Augmented Dickey Fuller) test to determine the stationarity or otherwise of the variables as well as error correction model. Studies such as Apere and Karimo (2015); & Ndugbu and Okere (2015) have shown that the use of OLS with non-stationary variables may result in suspicious regressions, thus the need for the unit root test. The choice of ADF was informed by its popularity, recommendations and use by various authors including Ndugbu & Okere (2015).

### 4.0 Data Analysis and Findings

For arriving at a dependable and unbiased analysis, we employed a secondary data obtained from the CBN statistical bulletin from 1980-2015. Co-integration, Augmented Dickey Fuller, Error correction model and regression analysis were done on the data using e-view software.

**Table 4.1: Turnover ratio, bank assets, loans and advances, monetary policy rate, money supply, liquidity ratio, cash reserve ratio**

Year	Turnover ratio (%)	Bank assets (₦' m)	Loans and advances (₦' m)	MPR (%)	Money supply (₦' m)	Liquidity ratio %	Cash reserve ratio %
1980	.0552	16340.40	7856.60	6.00	11856.60	47.60	10.60
1981	.0578	19477.50	8570.05	6.00	14471.17	38.50	9.50
1982	.0660	22661.90	10668.34	8.00	15786.74	40.50	10.70
1983	.0303	26701.50	11668.04	8.00	17687.93	54.70	7.10
1984	.0188	30066.70	12462.93	10.00	20105.94	65.10	4.70
1985	.0106	31997.90	13070.34	10.00	22299.24	65.00	1.80
1986	.0118	39678.80	15247.45	10.00	23806.40	36.40	1.70
1987	.0329	49828.40	21082.99	12.75	27573.58	46.50	1.40
1988	.0234	58027.20	27326.42	12.75	38356.80	45.00	2.10
1989	.0172	64874.00	30403.22	18.00	45902.88	40.30	2.90
1990	.0298	82957.80	33547.70	18.00	52857.02	44.30	2.90
1991	.0188	117511.90	41352.46	14.50	75401.18	38.60	2.90
1992	.1520	159190.80	58122.95	17.50	111112.30	29.10	4.40
1993	.1570	226162.80	127117.71	26.00	165338.70	42.20	6.00
1994	.1410	295033.20	143424.21	13.50	230292.60	48.50	5.70
1995	.1221	385141.80	180004.76	13.50	289091.10	33.10	5.80
1996	.1151	458777.50	238596.56	13.50	3458554.00	43.10	7.50
1997	.0863	584375.00	316207.08	13.50	413280.10	40.20	7.80
1998	.0679	694615.10	351956.19	14.30	488145.80	46.80	8.30
1999	.0903	1070019.80	431168.36	18.00	628952.20	61.00	11.70
2000	.0846	1568838.70	530373.30	13.50	878457.30	64.10	9.80
2001	.1131	2247039.90	764961.52	14.31	1269322.00	52.90	10.80
2002	.0887	2766880.30	930493.93	19.00	1505964.00	52.50	10.60
2003	.0893	3047856.30	1096535.57	15.75	1952921.00	50.90	10.00
2004	.0497	3753277.80	1421664.03	15.00	2131819.00	50.50	8.60
2005	.0267	4515117.60	1838389.93	13.00	2637913.00	50.20	9.70
2006	.0124	7172932.10	2290617.76	12.25	3797909.00	55.70	2.60
2007	.0170	10981693.60	3668657.82	8.75	5127401.00	49.70	2.80
2008	.0130	15919559.80	6920498.75	9.81	8008204.00	43.70	2.30
2009	-.0784	17522858.20	9102049.11	7.44	9411112.00	31.00	1.10
2010	.0350	17331559.00	10157021.18	6.13	11034940.93	29.60	5.60
2011	-.0003	19396633.80	10660071.84	9.19	12172490.28	25.50	8.00
2012	.0216	21288144.40	14649276.46	12.00	13895389.13	49.70	12.00
2013	.0222	24301213.88	15778305.23	12.00	15158622.26	46.20	12.00
2014	.0219	27481532.60	17680520.00	13.00	16818486.70	30.00	20.00
2015	.0209	28117616.22	18719263.00	11.00	20029831.10	30.00	20.00

Source: CBN Statistical Bulletin Various Issues

### Test of Hypothesis

**H<sub>0</sub>:** Monetary policy instruments-money supply, liquidity ratio, monetary policy rate, cash reserve ratio- have no significant influence on commercial banks credit delivery.

**H<sub>a</sub>:** Monetary policy instruments-money supply, liquidity ratio, monetary policy rate, cash reserve ratio- have significant influence on commercial banks credit delivery.

**Table 4.2 Summary of Regression for Hypothesis Three**

Dependent Variable: LADV

Method: Least Squares

Date: 07/8/17 Time: 10:26

Sample: 1980 2015

Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-523406.6	818023.4	-0.639843	0.5270
MPR	5933.754	33568.79	0.176764	0.8608
MSP	0.975432	0.032496	30.01694	0.0000
LQR	-1296.368	14354.15	-0.090313	0.9286
CRR	29782.55	34575.19	0.861385	0.3956
R-squared	0.982668	Mean dependent var	3285793.	
Adjusted R-squared	0.980432	S.D. dependent var	5639213.	
S.E. of regression	788842.7	Akaike info criterion	30.12277	
Sum squared resid	1.93E+13	Schwarz criterion	30.34270	
Log likelihood	-537.2098	Hannan-Quinn criter.	30.19953	
F-statistic	439.4114	Durbin-Watson stat	1.562101	
Prob(F-statistic)	0.000000			

**Source: E-view software**

Table 4.2 above shows that MPR, MSP and CRR have positive relationship with LADV. That is, the higher the MPR, MSP and CRR, the higher the LADV. However, LQR has negative relationship with LADV.

The R<sup>2</sup> at 98.27% indicates that the variables are strongly fitted which was also confirmed by the adjusted R<sup>2</sup> found to be 98.0%. The standard error test shows that only money supply is statistically significant on bank credit.

The t-test shows that t-cal for MPR is 0.176764 while its prob-value of 0.8608 is significant at 5% confidence level leading to the rejection that there is significant relationship between monetary policy rate and bank loans and advances. The t-cal for MSP is 30.01694 with a prob-value of 0.000 that is insignificant at 5% confidence level leading to the acceptance that there hence acceptance that there is significant relationship between money supply and bank loans and advances. The t-cal for LQR is -0.090313 with a prob-value of 0.9289 that is significant at 5% confidence level leading to the rejection that there is significant relationship between liquidity ratio and bank loans and advances. The t-cal for CRR is 0.861385 with a prob-value of 0.3956 that is significant at 5% confidence level leading to the rejection that there is significant relationship between cash reserve ratio and bank loans and advances.

However, the relationship between some of the independent variables and the dependent variable is not in line with our apriori expectation, we therefore explore more robust econometrics test to derive home our point.

**Table 4.3 Summary of Augmented Dickey Fuller for Hypothesis**

Variables	ADF Unit Root Statistics at 1 <sup>st</sup> difference	Order of integration
LADV	-7.347069	1 (2)
MPR	-6.029711	1 (1)
MSP	-4.307443	1(2)
CRR	-2.004458	1 (2)
LQR	-6.380564	1 (1)
Critical values: 1%=-3.639407, 5%=-2.9511257, 10%=-2.614300		

**Source: Author's computation**

Table 4.3 above presents the summary results of the ADF Unit root tests carried out on all the variables of our models. From the table, it is evident that none of the variable was stationary at level form and this means that problem of unit root exists in the data. Variables like MPR and LQR became stationary after 1<sup>st</sup> difference, while LADV, MSP and CRR only became stationary after 2<sup>nd</sup> difference. This shows an evidence of cointegration between the dependent variable LADV with MSP and CRR. This now led us to carry out a cointegration test among the stated variables.

**Table 4.4 Summary of Johansen Co-integration Test**

Date: 07/08/17 Time: 11:33  
Sample (adjusted): 1982 2015  
Included observations: 34 after adjustments  
Trend assumption: Linear deterministic trend  
Series: LAD CRR M2  
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized	No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *		0.587178	45.95256	29.79707	0.0003
At most 1 *		0.356137	15.87144	15.49471	0.0439
At most 2		0.026189	0.902280	3.841466	0.3422

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

**Source: Author's computation**

The result of the co-integration shows there is 2 co-integrating equation in the model. That is, a long-run relationship exists between LADV, CRR and MSP. To establish the speed of adjustment from the longrun relationship, we proceed with the VECM and the result presented below.

### PASSIMONIOUS ERROR CORRECTION MODEL (ECM) (MODEL THREE)

Dependent Variable: D(LAD)

Method: Least Squares

Date: 07/18/17 Time: 13:03

Sample (adjusted): 1987 2015

Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LAD(-1))	0.438531	0.166815	2.628842	0.0150
D(CRR(-6))	-170974.6	77498.28	-2.206173	0.0376
D(M2(-5))	0.123240	0.154449	0.797934	0.4331
D(M2(-4))	0.210901	0.148191	1.423168	0.1681
ECT2(-1)	-0.431995	0.180243	-2.396744	0.0251
C	175181.0	165716.6	1.057112	0.3014
R-squared	0.571585	Mean dependent var	644966.1	
Adjusted R-squared	0.478451	S.D. dependent var	1018553.	
S.E. of regression	735582.2	Akaike info criterion	30.03670	
Sum squared resid	1.24E+13	Schwarz criterion	30.31959	
Log likelihood	-429.5322	Hannan-Quinn criter.	30.12530	
F-statistic	6.137241	Durbin-Watson stat	2.292803	
Prob(F-statistic)	0.000944			

The ECM test shows that ( $R^2$ ) is 57% implying a fairly fitted relationship between the variables and bank loans and advances. The Adjusted  $R^2$  is approximately 48% also shows that 48 percent of changes in bank loans and advances, was jointly explained by MSP and CRR. The Error-correction coefficient of -0.431995 has the right sign (negative) and shows that 43% deviation from equilibrium is corrected annually. Also, the F-statistic with 0.0009 probability level indicates that the overall regression is significant at 5% confidence level.

Equally, there is absence of auto correlation as evident by DW statistic of 2.29.

On the basis of the size and magnitude of the coefficients, M2 at various lag levels has positive but insignificant impact on Bank Loan and Advances (BLAD). The positive relationship between M2 and BLAD is line with the apriori expectation. The Cash Reserve Ratio (CRR) shows the right sign (negative) as expected and is significant at lag 6. Therefore, we reject  $H_0$  and accept  $H_a$  and conclude that monetary policy instruments have an impact on commercial banks assets performance, equally, the effect is instrument sensitive.

#### Discussions of findings

The empirical results emanating from the analysis indicates that monetary policy had some level of effect on bank performance proxied by Turnover rate (TOR), Bank Assets (BAS) and Loan and Advances (LADV). It is equally indicative of the fact that the relationship is instrument sensitive, i.e, some monetary policy tools work better on some bank performance indexes while such may not work on some other ones.

To buttress our point, only LRR was negative and equally significant in relation with Bank Turnover Rate (TUR), while Money supply (M2) alone had a positive and significant in relation with Bank Assets (BNKAS), on the other hand, Cash Reserve Ratio (CRR) alone had a negative and significant impact on Bank Loan and Advances (LADV). The apriori expectations between therefore mentioned variables in relation to the dependent variables

were met.

The negative relationship between liquidity ratio and turnover ratio also indicates that when CBN increases the ratio banks liquid assets reduces which hampers their ability to create more loans and engage in more investment thus reducing their turnover hence conforms to expectation.

Equally, the positive relationship between money supply (M2) and Bank assets indicates that the higher the money supply the higher the higher the bank assets which may tend to support the monetarist theory since it posit that increasing money supply increases bank credit creation ability through the multiplier effect, and thus increasing their profitability level.

This supports the monetarist theory view on the impact of monetary policy on banks asset portfolio and was found by studies such as Amacher and Ulbrich 1989; Gertler and Gilchrist, 1991; Ogbulu and Torbira, 2012; Okpara, 2010; & Solomon (2013).

The CRR will complement OMO in ensuring that excess liquidity in the banking system is minimized. Earlier, Heuvel (2005) have argued that monetary policy affects bank lending through two channels. He notes that by lowering bank reserves, contractionary monetary policy reduces the extent to which banks can accept receivable deposits, if reserve requirements are binding.

The result of the co-integration all the models shows that there is 2 co-integrating equation among the variables which indicates that there is long-run relationship among the variables in each of the model. The Error correction mechanism in each of the model had the right sign (negative) which indicates the speed at which equilibrium is restored at any time there was a distortion among the variables.

Although the result may have indicated that only MPR impacts on bank assets but combination of the instruments tends to jointly impact on bank assets.

The strength of monetary policy was found to lie on the combination of the various instruments. The findings thus, support the monetarist theory that monetary policy when effectively utilized can have effect on banks activities and portfolio especially their portfolio performance.

## **5.0 Conclusions**

It is the conclusions of the researchers that monetary instruments can work better in the Nigerian banking industry if all the variables can be made to be effective as a combined effect of all the instruments of bank regulations will tend to give a better result. In our analysis, it was discovered that the observed impact of monetary policy instruments on bank performance was instrument sensitive.

On turnover ratio, we discovered that it was LRR that has a significant effect on it, while Money supply had a significant effect on Bank assets (BNKAS), on that of Loan and advances (LADV) it was CRR that has a significant effect on it.

## **6.0 Recommendations**

1. The CRR should be complementing the Open Market Operations (OMO) in ensuring that excess liquidity or lack of it in the banking system is minimized, that way Money Supply (M2) will be more effective as a tool on measuring other performance indicators.
2. From the findings, the Liquidity Reserve Ratio (LRR) tends to impact more on bank turnover ratio. Because monetary effects of CRR changes are hard to be isolated from those of other policy measures. It means that the constraint of higher reserve requirements on bank lending seems more binding when initial excess reserves shrink

below some threshold, restraining the subsequent loan expansion while leading to higher, more volatile market interest rates. The CBN should carefully and thoroughly consider the turnover effect in deciding the LRR.

3. The problem of inflation targeting remains the issue CBN should focus a lot of attention, therefore while trying to stabilize the economy, policies that may affect banks loans which is necessary for economic development should be checked.

### 6.1 Contributions to knowledge

Our research revealed that monetary policy instrument can actually be effective on bank performance if concerted efforts are made by the monetary authorities to make all the instruments work as they are supposed to work.

1. From the study, it could be deduced that monetary policy in Nigeria can only be effective when all the instruments are jointly used.
2. Most importantly, the study presents up-to-date data analysis thus making its findings more recent than most other reviewed studies.

### Suggestions for Future Studies

Following the scope of this present study using instruments such as monetary policy rate, money supply, 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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