

**EFFECTS OF MONETARY POLICY ON BANKS ASSET PORT FOLIO  
BEHAVIOUR: EVIDENCE FROM NIGERIAN ECONOMY**

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**Abstract**

*This research study examined the effects of monetary policy on bank's asset portfolio behaviour in the Nigerian economy. The purpose of this study was to investigate the nature of relationship between monetary policy instruments and growth rate in total Bank asset portfolio behaviour. In course of this study, secondary data were sourced from the Central Bank of Nigeria Statistical Bulletin, the granger causality test and the Johansen co-integration test in a Vector Error Correction Model (VECM) setting were employed. The empirical result demonstrate that there exists a long-run equilibrium relationship between monetary policy tools such as Cash Reserves Ratio (CRR), Loan to Deposit Ratio (LDR), Liquidity Ratio (LQR) and Rates (MRR) and Treasury Bill Rates (TBR) have no significant impact on Growth rate in total bank assets portfolio. The study also showed that, there is no granger causality between the dependent variable Growth in total bank asset" portfolio behaviour and the independent variable such as Minimum Rediscount Rates, Cash Reserves Ratio, Loan to Deposit Ratio and Liquidity Ratio within the period under study. It was recommended that monetary policy tools should be used for the purpose of achieving Quality Asset Portfolio Behaviour (QAPB).*

**Keywords;** Monetary Policy, Bank Assets Portfolio, Nigerian Economy and Central Bank of Nigerian Bulletin

**Introduction**

Over the years nationally and globally the financial sector and indeed the banking industry in particular to a large extent has always been regarded by scholars, and Financial analysis as pivotal and special (Toby 2008). This is because of strategic systemic role in the transformation of a developing economy like Nigeria into a modern industrial society. This sector contributes immensely to economic growth and development of every nation by channeling financial surplus resource into productive investment (Okafor, 1983).

Hence, it is obvious that without these sectors, a country domestic economy would have been characterized and limited to a barter economy, which is dearly 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 banks 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 is refers to the prudent management of a bank's asset and liabilities in order to seek some optimum combination of income or profit, liquidity and safety. Of-ail assets of cornmerc4al 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 of income-earning assets. These assets plus the bank's cash make up is know 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 policies 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, Central Bank of Nigeria (CBN) by law controls and supervises the activities of other banks (Deposit Money Bank) through its monetary instruments such as Open Market Operation (OMO),discount rate (MRR), Minimum Liquidity Ratio (MLR), and even Loan to Deposit Ratio (LDR).

Monetary policy according to Ohale and Onyema (2002) can be defined as the measures taken by the government to influence money supply, interest rates (credit) in the economy with a view of influencing the overall macroeconomic aggregates (that is output, employment, economic growth, balance of payment disequilibrium and prices).

Monetary policy may be expansionary or restrictive (concretionary). An expansionary monetary policy is designed to regulate the growth of aggregate demand through increase in the rate of growth of money supply, thus making credit more available and interest rate lower. An expansionary monetary policy is most appropriate when aggregate demand is low in relation to capacity of the economy to produce. That is when unemployment of resources especially labour is high. A restrictive or concretionary monetary policy is designed to control the growth of aggregate making credit less available and interest rates high. A restrictive monetary policy would be most appropriate in terms of excess money supply caused by inflation.

According to Onoh (2007), monetary policy is a major of economic management, bank asset portfolio behaviour and overall economic performance. However, for monetary policy to achieve its necessary desired objectives, it has to be well co-ordinated, managed, harmonized and well complemented with fiscal policy. Also, there is the active use of stabilization securities as an instrument of monetary control from time to time. There is a requirement that the components of government (gilt-edge) securities held in each banks liquid asset portfolio be of a certain minimum percentage. According to Moses and Mbufor (2007), as cited in Gbosi 2005, the conduct of monetary policy relates to the deliberate strategies which are adopted by authorities to influence the level of credit in an economy

with the view of achieving desired objective of price stability which is usually set as the prime objective of monetary policy.

According to Central Bank of Nigeria (2002), in order to encourage healthy competition for non-government sector deposits and to facilitate financial deepening, all insured banks in the system were directed to transfer all government deposits to the Central Bank of Nigeria (CBN). This directive drastically worsened the liquidity position of many banks resulting in some of the banks borrowing in the inter bank market at a very high rates. The failure of direct approach to monetary controls over the years prompted the adoption of open market operations (OMO), an indirect system. Thus, with the adoption of indirect approach to monetary and credit control, credit ceilings had to be imposed on banks whose financial conditions are unsatisfactory while banks with satisfactory financial conditions have the liberty to expand their credit portfolio to any level that can be prudently sustained. Therefore, our focus in this work is to examine, assess the effects to changes on the various monetary instruments ordinary held in the portfolio of insured deposit money banks and to also ascertain whether or not there has been a significant change in insured bank asset portfolio behaviour in recent times.

### **Statement of Problem**

The Central Bank of Nigeria (CBN) which is the Apex Bank occupied an important role ensuring and promotion of monetary stability and soundness of financial system. This cannot be reemphasized because it also helps to carryout an efficient and effective monetary policy. It has to act as penalties to erring/defaults banks.

These policies more often than not conflict with the banks objectives which include profit maximization and shareholders wealth maximization with the aim of maintaining optimum liquidity, safety and cost minimization strategies. The techniques by which the CBN put together to achieve its monetary objective can be classified broadly into two, namely: the portfolio control and market intervention approach. The former places restriction on deposit money banks by limiting their ability to acquire assets and liabilities. The later relies on the power of the monetary authorities to influence the availability and rate of returns on financial assets thus affecting both the supply and demand of money. Apart from monetary policy, other factors that also affect bank asset portfolio behaviour are the general economic condition, the existing policies of the banks and change in government policies and programmes, bank past experience, externalities and profit level may also be a determine factor. Channel of monetary policy transmission, changes in the money (consumption, investment) through the effects of the changes in interest rate on cost of capital. The credit channel works mainly by portfolio adjustment in banks, household and firm balance sheets in favour of asset that have higher returns during periods of monetary fluctuations. Under normal situation, other asset commanding higher demand would produce more and thus stimulate the economy. A special case of the credit channel is the bank to ratio credit. In such a situation, customers who depend on bank loans would be crowded out of the loan market.

However, with these noble objectives of monetary policy in relation to the effects on bank asset portfolio behaviour in Nigeria economy, monetary policy instruments are yet to yield the much desired results, these justify the need to undertake a research to analyze the effects of monetary policy on bank asset portfolio behaviour as it affect the stock of money

supplies and the credit base of banks thereby having positive outcome on the economy. It would also examine if a change in bank asset portfolio behaviour vis-a-vis in Nigeria economic growth within the period understudy.

### **Objective of the Study**

The main purpose of this study is to determine whether there is any significant effect of monetary policy on bank asset portfolio behaviour using evidence from Nigerian economy and to determine if there is any causal relationship between monetary policy tools and growth in total banks asset portfolio behaviour within the period under review. Specifically, the study is sought to:

- i. To examine the effect of Minimum Rediscount Rate (MRR) in relation to growth rate in total banks asset portfolio behaviour.
- ii. To examine the effect of Cash Reserve Ratio (CRR) on growth rate in banks total assets.
- iii. To Evaluate the effect of Treasury Bill Rate (TBR) on growth rate in total bank asset.
- iv. To find out the effects of loan to deposit ratio on growth rate in total banks assets.
- v. To examine the effects of liquidity rate in total bank assets.

### **Research Question**

In the course of the research, the study intends to proffer solutions to the following questions

- Is there any significant relationship between Minimum Rediscount Rate (MRR) on growth rate in total Banks total asset portfolio behaviour?
- What are the effects of Cash Reserve Ratio (CRR) on growth rate in total banks total asset?
- What are the effects of Treasury Bill Rate (TBR) on growth rate in total banks total asset?
- Is there any significant relationship between loan to deposit ratio on growth rate in total bank asset?
- Is there any significant relationship between liquidity ratio on growth rate in total bank asset?
- To find out whether monetary policy tools /instrument leads to change on growth rate in total Banks Assets?

### **Research Hypotheses**

To have an effective research, a test will be carried out in order to give the research work a clear understanding. The following null hypotheses shall be tested.

- Ho<sub>1</sub>: There is no significant relationship between minimum rediscount rate and growth rate in total banks asset portfolio behaviour.
- Ho<sub>2</sub>: There is no significant relationship between cash reserves ratio and growth rate in total banks asset.
- Ho<sub>3</sub>: There is no significant relationship between Treasury Bill Rate (TBR) and growth rate in total banks assets.

Ho<sub>4</sub>: There is no significant relationship between loan to deposit ratio and growth rate in total banks assets.

Ho<sub>5</sub>: There is no significant relationship between liquidity ratio and growth rate in total banks assets.

### **Scope of the Study**

For pragmatic and analytical reasons, this study will be limited to the functional relationship between monetary policy instruments such as Minimum rediscount Rates (MRR), Cash Reserve Ratio (CRR), Loan to deposit Ratio (LDR), Liquidity ratio (LR), Treasury Bill rates (TBR) and growth rate in total bank assets portfolio behaviour. This will enable us ascertain how the review of the existing monetary policy transmission mechanism will effect the growth rate in total bank asset portfolio behaviour of banks within the period under review. For a wider coverage, the period from 1980 to 2009 will be studies and thus will also enable us make vital comparison on the effectiveness of monetary policy tools within the period under review.

## **REVIEW OF RELATED LITERATURE**

The above statement is very important /relevant in any review of the effects of monetary policy on banks asset portfolio behaviour; evidence from Nigerian economy. This is because there are different empirical findings, theories and descriptive analysis of the subject matter by different scholars in the past. It is on this basis that a review of this research literature become necessary. It will also serve as a guide on our study in the relationship between monetary policy and banks portfolio behaviour.

### **Regulatory and Monetary Policies**

The regulatory- actions of the monetary authorities, particularly with regard to the conduct of monetary policy affect the availability of credit in the economy. Since the monetary policy stance impacts on the reserves of commercial banks, their portfolio management in response to policy action affects the flow of credit. As a matter of fact, if legal reserve requirements (or cash to reserve ratio) is high, commercial banks will be left with little cash or credit to advance or create loanable funds and vice versa (Jhingan, 2005 and Cookey 2000). The leading caposits mobilized is sterilized by the central bank, through reserve requirements, partly for prudential reasons and partly for monetary control purposes. This implies that less money is available to commercial banks for leading operations.

The theory portfolio regulation provides new insights into the loan behaviour of commercial banks. The theory posits that the regulation of banks is necessary a maintain safety and soundness in the industry. This involves attempts by monetary authorities to compel greater solvency and liquidity on individual banks than they would adopt voluntarily. Thus, bank supervisory and regulatory agencies devote more time to the determination of the level of risk of bank assets and the adequacy of their capital. According to Peltzman (1970), "If the assts portfolio is deemed too risky or capital inadequate, the relevant supervisory agency will attempt to compel a change in the banks' balance sheet". Such a bank is given a 'Hobsian' choice more capital or less risky assess.

Nwankwo (1990) observes that the volume and structure of bank deposit affect its lending capacity and patterns. He argued that since bank deposit consist mainly of demand, time and savings, if the proportion of demand deposit which can be theoretically withdrawn at any time is greater than the proportion of time and savings deposit, the tendency will be for banks to grant only short term loans, so that they will remain liquid enough to meet the withdrawal needs of depositors. On the other hand, he continued, if the proportion of savings and time deposits are greater, the banks will be better positioned to grant long term loans with little or no risk of liquidity crisis since, theoretically, savings and time deposit customers are expected to give withdrawal notice in advance.

Three different approaches to commercial banks' asset management have been espoused by Reed, Cottar, Gill and Smith (1990). The first approach called the Tool of funds' approach requires that all funds should be pooled together from where allocation to various assets are made in order to liquidity and profitability. The primary reserve must be satisfied first, followed by the secondary while the loan portfolio is the third priority. The residual funds are allocated to the investment portfolio.

Awosike and Xwoko (1983) argue that the state of the economy is an important factor that determines the volume of funds allocated to the loans portfolio. They stated that:

*"The extent to which banks can mobilize saving (which determines in extent of lending) not only depends on the availability of banks and bank services but also on the degree of monetization of the economy, the level of income, the savings habit and the distribution of bank service within the economy"*

Demand for bank loans is also a function of the business cycle. In periods of boom, business would have a greater demand for funds to finance its investments. In most studies the level of business activities is proxied by the Gross Domestic product; GDP.

In Nigeria, Ojo (1976). worked on the demand and supply of bank loans using quarterly data from 1962 — 1972 and discovered that the demand for commercial banks loan is a function of the level of productivity, approximated by the GNP, interest rate on loans and some seasonal factors. Ajayi (1978), estimated a supply of loans equation for commercial banks in Nigeria and found it to be a function of excess liquidity ratio, poor lending rate, net export and the volume of loans in the previous period.

Udegbumam (1992). following Tobin's formulation, examined the portfolio behaviour of merchant banks in Nigeria by maximizing the bank's utility function and derived the desired asset equation. In his result, interest rate loan portfolio, while the GDP variable performed poorly. The result differed slightly with Cookey (1997), which found GDP significant, but with a wrong sign.

### **Theoretical Framework**

Generally speaking, in recent times, monetary policy and bank asset portfolio behaviour tend to occupy a vital position in the minds of policy makers, financial analysts, practitioners, managers and administrators of industries. This is because the resultant effects, if managed and harmonized properly are increase and improvement in bank's performance, higher returns on investment, increase on profitability, shareholders wealth maximization and customers' satisfaction. A proper manipulation of monetary policy variables aggregates in other hands greatly affects bank's banking service satisfaction, deliver}' strategies and profit. Thus, the management of monetary policy practices in an organization, institutions, entity such as Deposit Money Banks (DMBs) and corporations is a function of its corporate portfolio behaviour (CPB).

### **Monetary Policy and Bank Lending**

For monetary policy to operate through credit channel, not only must there be bank dependent borrowers, there must also be banks willingness to lend. To determine whether monetary policy affect bank lending some studies have examined how bank adjust their portfolios in periods of monetary tightening while other studies have looked at changes in the price and non-price terms of lending, Romer (1990)', Bernanke and Blinder (1992) agreed that monetary policy actually affected bank lending positively more especially in the

period monetary policy expansionary so as to encourage investors and decrease unemployment rate.

### **Bank Lending and the Transmission of Monetary Policy**

Bank lending has received increasing attention as an important of the transmission of monetary policy. Proponents argue that changes in banks assets as well as bank liabilities influence the future course of the economy. Because financial constraints may alter firm's investment, employment and financing decisions, it is important to understand which firms might constrained and under what circumstances. Many economists remain skeptical of the role of banks, however, believing that a focus on interest rates or money aggregates is sufficient for understanding the transmission of monetary policy.

Himmelberg and Morgan (1995) contend that not only are bank loans special but a surprisingly large percentage of firms continue to depend on banks for financing. Despite much previous work emphasizing the dwindling role of banks, they show that the reliance of manufacturers remain especially dependent on banks. In another study Peek and Rosengren (1995) find evidence consistent with both monetary and bank regulatory policy altering the supply of bank loans. However, they emphasize that to the extent a distinct lending channel exists, its magnitude is likely to be dependent on the financial condition of bank. Using data from New England Banks, Peek and Rosengren provide evidence that capital constrained and unconstrained banks react differently to changes in the federal funds rate. A major implication of their findings is that the capital requirement constraint faced by banks, as well as the bank reserve constraint, should be taken into account in determining the likely effect of monetary policy.

The works of Hubbard (1995) and James (1995) also help to explain monetary policy and regulatory policy affect bank loans. Hubbard emphasized that it was difficult to distinguish fully between the effects of changes in the federal funds rate on constrained banks and on unconstrained banks, using only a limited time series for one region in country. He cautions that examining bank reactions to monetary policy shocks is only a small pan of the lending view, and that more complete tests would, match borrowers, loans, and lender characteristics. James suggests that a discussion of banks' reactions to monetary policy must carefully consider more than just the leverage ratio constraints.

### **Bank Portfolio Behaviour**

One approach to identifying a bank lending channel is to see how banks alter their assets and liabilities during a period of monetary restraint. Accordingly, a number of studies have examined how banks adjust loans, securities and deposit and non-deposit liabilities to changes in monetary policy. Several stylized facts about bank portfolio behaviour have emerged from the line of research Romer and Romer, (1990). First of all, in response to a tightening of policy, bank transactions deposits or core deposits fall immediately, then total bank loans decline, but only after a significant lag of two to three quarters. Subsequently, banks are able to maintain lending in the face of a decline in core deposits by selling securities and issuing managed liabilities such as time deposits and Eurodollar borrowings.

The operations of banks are risky and conflicting between liquidity, safety and profitability of banks (commercial) are deposits payable virtually on demand to depositors. A bank that

invest only in assets bearing the highest interest return might find itself unable to pay cash, if its depositors wanted their money back coupled with unforeseen loan difficulty from debtors.

In periods of economic uncertainty and depression with the likelihood of growth under investment opportunities, bank need to be extra cautious since the risk inherent in banking operations especially those associated loans and advances and investment increase. The efficiency and effectiveness in performance of each bank as a custodian of public savings and investment function must be clearly defined.

At present the services rendered by banks in mobilizing funds and investment, the mobilized funds have increased by leaps and bounds at the recent recapitalization of the banking sector through mergers and acquisition and increase in shareholder, fund has a great impact on banks portfolio.

Bernanke and Blinder (1992), Stein and Wilcox (1993) are of the opinion that reaction of lending policy to a monetary tightening both using aggregates U.S data. While the former supply a vector autoregressive (VAR) model and conclude that the level of loans in the banking sector's balance sheet shrinks after an unanticipated rise in the federal fund rate (that is monetary policy rate).

Douglas (2006) argues, these result are consistent with the credit view but could also be obtained if there is no operative credit channel. Reductions in loans could also be due to demand effects through the conventional interest rate channel of monetary transmission. To resolve the identification problem emerging, it is important to analyze both price and quantities of loans to "simplify" the issue to a classical simultaneous equation bias problem as hi the case of Doddy, Iman and Bambang (2006) in their study on Bank Portfolio model and monetary policy in Indonesia.

According to Jhingan (2004) and Toby (2003), As profit- maximizing firm, commercial banks can increase profits by investing more of their asset portfolio in higher yielding but riskier investments or loans. However, profits must be earned without sacrificing the bank's safety, that is, adequate liquidity and adequate capital must be maintained. Bank safety refers to maintaining the bank as a going concern-staying in business. If a management and sell their stock. Bank regulators are also concerned about bank safety. If the bank's management actions are hot consistent with what the regulators believe to be prudent banking practices, they may intervene in the management or, at the extreme, revoke the bank's licence.

Another operational problem facing commercial banks is their need for liquidity. Bank liquidity refers to the bank's ability to accommodate deposit withdrawals and pay off other liabilities as they become due. If a bank has insufficient funds to meet its depositor's demands, it must close its doors. Banks fail therefore, because they are unable to meet their legal obligations to depositors and other creditors. Major liquidity problem can arise, however, if deposit drains are abnormally large and unexpected.

Studies have shown that an excessive financing requirement i.e financing gap plus a bank's liquid assets can result in bank insolvency. A widening gap can warn future liquidity

problem for a bank since it may indicate increased deposit withdrawals and increasing loans due to more exercise loan commitments. If the bank does not reduce its liquid assets, the manager must resort to more money market borrowing and as the borrowings rise, sophisticated lenders in the money market may be concerned with the bank's credit worthiness. They may react by imposing high risk premiums on borrowed funds or establishing stricter credit limit by not rolling over funds lent to the bank. If the bank's financing requirements dramatically exceed such limits, it may become insolvent.

The safety deposits and depositors has attracted the attention of both analyst and policy makers in recent times because of high level of distress and liquidity in the Nigerian banking industry. This also accounts for high non-performing loans and leases accounting for 78%. This leads to banks becoming excessively liquid, but grossly unprofitable due to built up of non-performing or classified loans and widening financing requirement.

The root causes of the liquidity crisis that characterized the deregulation era of 1986-1993 were reported in Toby (1997) as follow:

During the eight years of financial sector liberalization, interest rates fluctuated perpetually, and the naira depreciated massively. The extreme volatility in interest and exchange rates affected the financial industry severely. It was soon to become clear that banks could not and borrowers could no longer repay the loans on such high interest rates. It resulted in a high build-up of non-performing loans and advances, capital erosion and illiquidity.

However in (2004), the Central Bank of Nigeria (CBN) Is implemented a set of reforms aimed at restructuring the Nigeria banking system with far-reaching portfolio implications. The growing level of classified or non-performing loans in banks, and incessant reports of distress borrowings from inter-bank market are clear signs of another Liquidity crisis in the banking sector.

It is a generally fact that monetary policy can significantly influence both economics and banking behavior. According to Mishkin (1997), understanding the conduct of monetary' policy is important because it does not only affect the money supply and interest rates but also has a major influence on the level of banking and economic activities and hence on our general well being (welfare).

The transmission mechanism is characterized by long, variable and uncertain time lags (Toby, 2003). Thus it is difficult to predict the precise effect of monetary policy actions on the economy and price level. A lot of authors of economics have postulated a whole gamut of channels or transmission mechanism through which economic activities have impact been upon. These channels include the interest rate channel, other asset channel, the exchange rate channel, other asset price effects, and the credit channel etcetera.

### **Monetary and Money Market Developments in Nigeria**

The liquidity management measure adopted by the Central Bank of Nigeria from 1996 to 2000 was aimed at containing aggregate demand for money at a level consistent with non-

inflationary growth, Sansui (2010). The instruments applied for liquidity control included Open Market Operations (OMO), Cash Reverse Requirement (CRR), Minimum Liquidity Ratio (MLR), Stability Securities (SS), and Discount window operations. The scope of these monetary policy measures for liquidity control in the Nigerian banking system.

The Open Market Operations (OMO) conducted solely in Nigerian Treasury Bills (NTBs), remained the primary instrument of monetary management in 2000. This was complemented by Cash Reverse Requirement (maintained only by commercial banks) which was adjusted downward to 11.5 per cent in April, 2000 and further to 10.0 per cent in August, 2000, in order to reduce the cost of funds to banks and influence downward revision of interest rates. The Minimum Liquidity Ratio applicable to both the commercial and merchant banks was reduced from 40 to 35 per cent in April 2000 in order to ease the flow of credit to the private sector. The discount window operations including repurchase agreement (repos) Permitted banks and discount houses to access CBN for short-term financial accommodation.

### **Transmission of Monetary Policy in Nigeria**

Central bank of Nigeria report (2005), state the objectives of monetary policy over the years have remained the attainment of internal and external balance of payments, although the mechanism for achieving these objectives have changed over the years. Afolabi (999) puts it more succinctly or elaborately where he stated that the objectives of monetary policy have been to achieve the following.

- ❖ Reduction in the level of unemployment
- ❖ Reduction in the level of inflation
- ❖ maintenance of healthy balance of payment and
- ❖ Reduction in price stability

### **Empirical Evidence: The Nigerian Situation**

It is very important to note that not much has been done in this area in Nigeria in recent time. The financially repressive policies that produced the adjustment era of the late 1980s seem to have made the understanding of the channels of monetary transmission mechanism more difficult due to interest rate stickiness (Mishkin 1997). Afolabi (1999) has added that on appraisal of the use and effectiveness of monetary policies in Nigeria will naturally take into account the specific objectives for which these instruments were designed at the various periods in the country's economic history, the specific monetary instruments set in motion to produce these objective etc. According to Oyaromade as cited in (2007) carried out a study on the role of Bank credit and credit rationing in the monetary transmission mechanism in Nigeria. It was discovered that one way relationship existed between bank credit and real GDP, money supply and prices and investment and real GDP and with the causation running from credit to output, from money supply to real GDP and from investment to real GDP. Study concludes that two board channels of monetary transmission mechanism-the interest rate and the credit channels, played significant roles in the transmission of monetary impulse to the real sector in Nigeria.

In the previous section, we illustrated how a link between monetary policy and bank risk taking can be established. We now turn to empirical evidence to gauge the net effect of

monetary policy shocks on bank risk taking. We first conduct a simple empirical analysis of data-vary around changes in the monetary policy stance. To the conclusions in the previous section, we allow results to vary according to the degree of capitalization of the (admittedly scant) literature in which more extensive tests have been conducted. There we focus on papers that have a bearing for the riskiness of banks, and in particular on those that make predictions about the quality of bank lending.

### **Portfolio Definition**

Portfolio according to oxford dictionary of banking refers to the list of holdings in securities owned by an investor or an institution.

According to oxford dictionary of economics, portfolio is a set of different assets in the possession of an individual of firm. A variety of assets may be preferred to holding a single type of asset for several reasons. Holding a variety of assets reduces risk, and allows a combination of some assets with higher income but poor liquidity, and other lower income but poor liquidity. Large institution may also hold a variety of assets because there are not enough of some attractive assets to absorb all their funds or more likely, if they invested all they could in any one asset, their holding would be too large relative to the market to be liquid.

Portfolio analysis treats his allocation of banks assets subject to the availability of bank funds and the policy goals of the banks management specific emphasis is on the theory of obtaining the financial resources that provide and replace the banks working capital. As an investment package of liquid nature, the basic contents are treasury bills, stocks. cash, share certificates. The banks portfolio will be completed when these packages are identified, selected and rationally committed with funds. Portfolio is a combination of securities or other investment options.

So one can rightly say that portfolio is a universal set while investments are subset of a portfolio.

### **Portfolio Management**

Portfolio management addresses itself to the way and manner a firm utilizes its funds Harrison (2003). For a bank, portfolio management assists it to select a group of marketable securities that offer highest return at a given risk level (diversification) and basically effect a careful selection, frequent review and continuous evaluation of the depth and breadth of the portfolio variables.

Portfolio management refers to the prudent management of banks assets and liabilities in order to seek some optimum combination of revenue, profit, liquidity and safety. Borrowing from liquidity management theory, banks concentrate on the assets when referring to portfolio management, such that the operating income learning assets (OIEA) plus the cash balances equals a banks portfolio Ngerebo (2001), Jhingan (2004).

### **Monetary Policy**

Monetary policy refers to the credit control measures adopted by the central bank of a country. Onyema and Ohale (2001) define monetary police as policy employing central

bank control of money supply an instrument for achieving the objectives of general economic policy".

### **Commercial Bank Assets Portfolio Perspectives**

In the banking context, assets (sometimes referred to as resources) are items of value owned by the bank or claims the bank may have against others. Normally, most of a bank's assets are in the form of interest - earning assets such as loans and securities and non-earning assets. Non-earning asset include cash in the vault, which does not earn interest, as well as items deemed fixed assets such as the bank's premises, furnishing and equipment like desks and computers. Assets are customarily listed on the bank's balance sheet in order of decreasing liquidity, or the rapidity with which they can be transformed into cash. Cash is obviously the most liquid asset, while loans and fixed assets are generally considered to be the least liquid. In between are readily negotiable asset such as government securities (assuming a liquid secondary market exists) and other debt securities. In some jurisdiction banks may hold equity securities and these are often readily liquefiable. Together the first three categories are sometimes referred to as quasi-liquid assets, although the definition is not precise. The distinction between quasi-liquid and liquid assets, however, is sometimes blurred by disclosure and definition issues. For example, funds on deposit with another bank are normally deemed "quasi-liquid", but where such deposits are term deposits, they may in fact lack a degree of liquidity.

### **Summary of Review of Related Literature**

Moreover, current empirical research shows that a stringent monetary transmission mechanism can limit the effectiveness of banks asset portfolio behaviour, thus curtailing the level of investment in the economy. (Misa, 2002). Within this framework, the question is not yet asked and answered is whether or not monetary policy mechanism or manipulation improves Banks asset portfolio behaviour. It is strongly opined Litan (1993) the level of risk concentration in the banking industry. This study is not however intended to investigate the market discipline of bank risk, but we intend to show empirical evidence on the seeming trends in monetary policy in relation to banks asset portfolio behaviour using evidence from the Nigerian economy. Our result could enable us re-appraise the current supervisory and regulatory framework in Nigeria with a view to proffering workable solution to strengthen the industry and the economy at large.

According to Uremadu (2007), Igweike (2004), Oluyemi (1995), in line with Tobin's formulation, examined the portfolio behaviour of merchant banks in Nigeria by maximizing the banks utility function and derived the desired asset equation. In his result, interest rates and total deposit have significant impact on the allocation of funds to the loan portfolio, while the GDP variable performed poorly. The result differed slightly with Cookey (1997, 2009).

Ojo and Adewunmi (1990), Ajayi,(2005) stated that, reformulation in a disequilibrium framework, the model of demand for and supply of commercial bank's loans in Nigeria. The result was not too different from that of previous independent studies by Taylor (1997 and 2007) Moses and Mbutor (2007) where the interest rate coefficient failed the significant test. They explained that interest rate was pegged officially and did not move in response to demand and supply conditions.

Similarly, in Uremadu (2007) as cited in Cookey (2009), an investigation into the indicators of banks credit to the domestic economy been 1997 and 2002 and discovered that the ratio of banking system's credit to GDP is a positive function of demand deposit liabilities, maximum lending rates and bank's investment to GDP, while the bank balance with the CBN is formed to have negative impact on the volume of credit against a priori expectations.

In the view of Harrison (2003), Misa (2002), Bernanke (1992 and 1996), Black (2002), Kashyap, Anil, Henremy, Stein (2002), Romer and Romer (10004) and Taylor (1995 and 2007). The studies reviewed focuses on how changes in monetary policy affect the quality of banks balance sheet, the studies of Mishklin (1996 and 1997) and Litan (2004) revealed the impact of monetary policy on the riskiness of borrower rather than the effect of monetary policy on the Banks assets portfolio behaviour while Cookey (2009) in the study "Determinants Commercial Banks' credit to the domestic economy in Nigeria; a reexamination of the evidence using co-integration concluded that Commercial Bank Rates are important variable in explaining banks, relative credit is the ratio of total credit to total asset of the banks.

The work of Hubbard (1995) and James (1995) also help to explain how monetary policy and regulation policy effect bank loans. Hubbard emphasized that it was difficult to distinguish fully between the effects of changes in federal funds rate on constrained banks and on unconstrained banks using only a limited time series for one region in the country. He cautions that examining bank reactions to monetary policy shocks is only a small part of the lending view, and that more complete tests would match borrows, loans and lender characteristics. James suggests that a discussion of the banks reactions to monetary policy must carefully consider more than just the leverage ratio constraints. Hence our study will X-Ray the effects of monetary policy on growth in Total Banks' Asset Portfolio in Nigeria.

However Ogbulu and Torbira (20100, in their study of monetary policy and the transmission mechanism; evidence from Nigeria confirms the view of Onoh (2007) that monetary policy influences the indicator variables and also supplies vital answers to the transmission paths of monetary polices in Nigeria.

In sum, so far, theoretical model empirical studies reviewed in our study; relating to monetary policy and bank assets portfolio behaviour, especially in relation to the Nigerian Economy leave some gaps which we intend to fill.

Therefore, this study tends to,

- (i) X- ray the effects of monetary policy on banks' assets portfolio behaviour using growth in total banks' asset as our dependent variable and monetary policy tools such as Minimum Rediscount Rate (MRR), Cash Reserves Rate (CRR), Liquidity ratio (LQR), Loan to Deposit Ratio (LDR), and Treasury Bill Rate (TBR) as our independent variables.
- (ii) This study will establish the causal relationship between monetary policy tools and banks' assets portfolio behaviour.

- (iii) The study will further establish the behaviour relationship between growth in total banks' assets and monetary policy tools using analytical descriptive statistics

**Research Design**

Research design Baridam (2001) is described as the framework or plan which guides the collection as well as analysis of data in a study. The analysis of the data collected in the cause of this study involves the use of statistical tools, descriptive tables, graphs and chart. Also the multiple regression models was used to ascertain the relationships that exist between the dependent and independent variables which largely supported with t-test and F\*- ratio in order to determine the significance of the parameters estimates and the Pair-wise Granger causality test was adopted to ascertain the effects or otherwise the cause of change in monetary policy respect to Banks asset portfolio behavior using Nigerian data. The study will cover a thirty years period 1981 – 2010.

**Source and Method of Data Collection**

The study employed largely secondary data for analysis sourced mainly from the Central Bank of Nigeria (CBN) statistical bulletin national Bureau of Statistics (NBS), Business Journals, Banking and Finance Journal, websites, seminar papers and Federal Ministry of Finance (FMF) Publications and other related books of readings.

**Model Specification**

In this sub-section, a model that seeks to examine the effects of monetary policy on growth rate in total bank asset portfolio behavior; thus:

GTBA-  $f(\text{MRR}, \text{CRR}, \text{TBR}, \text{LDR} \text{ and } \text{LR}) \dots \dots \dots \text{eqn}(3)$

Transferring equ (3) into a testable form, we obtain the following regression equation;

GTBA	-	b0 + b1	+	(MRR)	+ U
GTBA	-	b0 + b1	+	(CRR)	+ U
GTBA	-	b0 + b1	+	(TBR)	+ U
GTBA	-	b0 + b1	+	(LDR)	+ U
GTBA	-	b0 + b1	+	(LQR)	+ U

Therefore, a priori expectation (b1 > 0)

- Where: b's = regression Coefficients
  - GTBA - Growth in Total Banks Asset
  - MRR - Minimum Rediscount Rates
  - CRR - Cash Reserve Ratio
  - TBR - Treasury Bills Rates
  - LDR - Loan to Deposit Ratio
  - LQR - Liquidity Ratio
  - E - Error term (unexplained variation)
- Therefore, a priori expectation (b1, b2, b3, b4, b5, >0)

**Method of Data Analysis**

Econometric analysis techniques were used in the analysis of the time series data in this study using the econometric Software Package for Social, Science (SPSS). The simple regression model that will be use in this study is given by;

$$Y = b_0 + b_1x + \dots + u$$

Where  $b_0$   $b_1$  are the parameters referred to as regression coefficients. The regression analysis will be use to develop a model for the analysis. With the regression equation.

the research would be able to predict the value of "y" given a change (increase or decrease) in the value of "x" and vice verse since the study makes use of five -independent variables and a dependent variable, the simple regression is given to regress each variable independently as;

$$Y = b_0 + b_1x$$

$$Y = b_0 + b_1(MRR)$$

Where, Y is the dependent variable which is the total Bank's asset portfolio behavior denoted by GTBA.

The independent variable are some monetary policy tools/instruments

- (a) Minimum Rediscount Rates (MRR) or newly called monetary policy rates (MPR)
- (b) Cash Reserve Ration (CRR)
- (c) Treasury Bills Rates (TBR)
- (d) Loan to Deposit Ratio (LDR)
- (e) Liquidity Ration (LQR)

**Data Presentation**

Table 1.0: Data Presentation of Monetary Policy Tools and Growth in Total Assets

Years	% Growth in Total Banks Assets (GTBA) (y)	% Minimum Rediscount Rate (MRR) (xi)	% Cash Reserve Ratio (CRR) (&)	% Liquid Ratio (LDR) (*3)	% Loan to Deposit Ratio (LDR) (X4)	% Treasury Bill Rate (TBR) (X5)
1981	0.00000	6.0000	10.6000	66.7000	47.6400	5.0000
1982	19.19843	6.0000	9.5000	74.5000	38.5000	5.0000
1983	16.34912	8.0000	10.7000	84.6000	40.5000	7.0000
1984	17.82551	8.0000	7.1000	83.8000	54.7000	7.0000
1985	12.60304	10.0000	4.7000	81.9000	65.1000	8.5000
1986	6.42305	10.0000	1.8000	66.9000	65.0000	8.5000
1987	24.00439	10.0000	1.7000	83.2000	36.4000	8.5000
1988	25.57940	12.7500	1.4000	72.9000	46.5000	11.7500
1989	16.45407	12.7500	2.1000	66.9000	45.0000	11.75.00
1990	11.75432	18.5000	2.9000	80.4000	40.3000	17J500

1991	27.92673	18.5000	2.9000	66.5000	44.3000	11.7500
1992	41.65232	14.5000	2.9000	59.8000	38.6000	15.0000
1993	35.46781	17.5000	4.4000	55.2000	29.1000	21.0000
1994	42.07027	26.0000	6.0000	42.9000	42.2000	26.9000
1995	30.45169	13.5000	5.7000	60.9000	48.5000	12.5000
1996	20.37350	13.5000	5.8000	73.3000	33.1000	12.5000
1997	29.18150	13.5000	7.5000	72.9000	43.1000	12.5000
1998	27.37656	13.5000	7.8000	76.6000	40.2000	12.0000
1999	53.14055	14.3100	8.3000	74.4000	46.8000	12.9500
2000	19.56657	18.000	11.7000	54.6000	61.0000	17.0000
2001	46.61779	13.5000	9.8000	51.0000	64.1000	12.0000
2002	43.22950	14.3100	10.8000	65.6000	52.9000	12.9500
2003	23.13445	19.000	10.6000	62.8000	52.9000	18.8800
2004	10.15498	15.7500	10.0000	61.9000	50.9000	15.0200
2005	23.14484	15.0000	8.6000	68.6000	50.9000	14.2100
2006	20.29799	13.0000	9.7000	70.8000	50.2000	7.0000
2007	58.09909	12.2500	2.6000	63.000	50.2000	8.8000
2008	53.09909	12.2500	2.8000	70.7800	55.7000	8.8000
2009	44.96452	8.7500	2.2300	81.2800	48.7500	6.9100
2010	30.97991	9.8100	2.8000	87.7800	44.1800	7.2800
	831.121290	398.4300	185.43000	2083.04000	1427.27000	362.7000

*Source:* Central Bank of Nigeria, Statistical Bulletin, Various Issues; National Bureau of Statistic, National Account of Nigeria, Various Issues.

## **Date Analysis**

### **Appendix A**

bo b,

GTBA R

$$b_0 = 16.466$$

$$b_1 = 0.846$$

$$GTBA = 16.466 = 0.846 + MRR + U$$

$$R = 24.6\%$$

$$R^2 = 6.1\%$$

$$\text{Adjusted } R^2 = 2.7\%$$

$$tbo = 1.879$$

$$tbl = 1.345$$

$$Dw = 1.248$$

Level of significant the F - statistic = 0.189

From the motel (5) Appendix A)  $b_0 = 16.466$  and  $b_1 = 0.846$  which shows the gradient of the regression.

$R = 24.6\%$  show the presence of correction between decedent variables (GTBA) and the independent variable (MR ).

$R^2 = 6.1\%$  shows that is poorly flitted because only 6.1% above dell on the expression line while the remaining 93.9% fell both above and below the regression line. Adjusted  $R^2 = 2.7\%$  show that 2.7% change in GTBA was explained by the explanatory variable (Error terms)

$Tb_0 = 1.879$  and  $tb_1 = 1.343$  show a negative relationship between GTBA and MRR at 5% level of significance. Durbin Watson (DW) = 1.248 < 2, which show the presence of positive autocorrelation or positively corrected. Level of significance of the F -statistic = 0.189,show that the overall regression was statistically at 5% level of significance .We therefore accept  $H_0$  and reject  $H_1$ . This concludes that there is no significant relation between minimum rediscount rate and growth rate in total banks total asset portfolio behaviour.

#### Appendix B

$B_0$	=	32.699
$B_1$	=	-0.808
GTBA	=	$32.699 + (- 0.808) + CRR + U$
R	=	19%
$R^2$	=	3.6%
Adjusted $R^2$	=	0.2%
$Tb_0$	=	5.873
$Tb_1$	=	1.024
$\Delta 10$	=	1.007

Level of significant the F-statistic = 0.315.

From the model (R) Appendix B,  $b_0 = 32.699$  and  $b_1 = -0.808$  show the gradient  $R = 19\%$  shows the presence of negative correlation between decedent variable GTBA and the independent variable CRR.  $R^2 = 3.6\%$  shows that is poorly fitted because only 3.6% dell on the regression line while the remaining 96.4% fell both above and below the regression line. Adjusted  $R^2 = 0.2\%$  shows that 0.2% change in GTBA was explained by the explanatory variable (CRR) and the remaining 99.8% was due to exogenous variable (error term)

$tb_0 = 5.873$  and  $tb_1 = 1.024$  shows a negative relationship between GTBA and CRR at 5% level at significance. Durbin Watson (DW) = 1.00722, which shows the presence of positive auto correlated. Level of significance of the F-Statistic = 0.315, shows that the overall regression was statistically at 5% level of significance. We therefore accept  $H_0$  and reject  $H_1$ , that concludes that there is no significant relationship between reserves ration and growth rate in total bank assets.

#### Appendix C TBR

b <sub>0</sub>	=	21.281
b <sub>1</sub>	=	0.531
GTBA	=	21.281 + -0.531 + LDR + U
R	=	18.3%
R <sup>2</sup>	=	3.4%
Adjusted R <sup>2</sup>	=	.000
tb <sub>0</sub>	=	3.021
tb <sub>1</sub>	=	.986
Dw	=	1.155

Level of significant the F-Statistic - 0.0332

From three (3) Appendix C b<sub>0</sub> = 21.281 and b<sub>1</sub> = -0.531 shows the gradient of the regression R = 18.3% show the presence of negative correlation between decedent variable GTBA and the independent variable TBR. R<sup>2</sup> = 3.4% show that is poorly fitted because only 3.4% fell on the regression line while the 99.6% fell both above and below the regression line. Adjusted R<sup>2</sup> = 0.000% shows that 0.000% change in GTBA was explained by the explanatory variable TBR and remaining 100% was due to exogenous variable (error term).

Tb<sub>0</sub> = 3.021 and tb<sub>1</sub> = 0.986 show a negative relationship between GTBA and TBR at 5% level of significance. Durbin Watson (DW) = 1.155 < 2, which shows the present of positive auto correlated. Level of significance of the F-Statistic = 0.332, shows that the overall regression was statistically at 5% level of significance. We therefore accept Ho and reject Hi, and concludes that there is no significant relationship between Treasury Bill Rate (TBR) and growth rate in total banks assets.

#### Appendix D LDR

b <sub>0</sub>	=	30.928
b <sub>1</sub>	=	-0.068
GTBA	=	30.928 + (-0.068) + LDR + U
R	=	4.2%
R <sup>2</sup>	=	0.2%
Adjusted R <sup>2</sup>	=	3.3%
tb <sub>0</sub>	=	2.074
tb <sub>1</sub>	=	-0.220
Dw	=	1.065

Level of significant the F-Statistic = 0.828

From mote (4) Appendix D b<sub>0</sub> = 30.928 and b<sub>1</sub> = -0.068 shows the gradient of the regression R - 4.2% show the presence of negative correlation between decedent variable GTBA and the independent variable LDR. R = 0.2% show that is poorly fitted because only 0.2% fell on the regression line while the 99.8% fell both above and below the regression line. In GTBA was explained by the explanatory variable LDR and above 100% was due to exogenous variable (error term).

Tb<sub>0</sub> = 2.074 and tb<sub>1</sub> - - 0.220 shows a negative relationship between GTBA and LDR at 5% level of significant. Durbin Watson (Dw) = 1.065 < 2, which shows the presence of positive auto correlated. Level of significance of the F-statistic = 0.828 shows that the

overall regression was statistically at 5% level of significance. We therefore accept  $H_0$  and reject  $H_1$ .

This concludes that there is no significant relationship between loan to deposit ratio and growth rate in total banks assets.

#### Appendix E LQR

b0	=	52.273
b1	=	0.354
GTBA	=	52.273
GTBA	=	$52.273 + (-0.354)(LQR) + U$
R	=	$25.8\% + (-0.354)(LQR) + U$
R <sup>2</sup>	=	06.7%
Adjusted R <sup>2</sup>	=	3.3%
tb0	=	2.974
tb1	=	- 1.414
DW	=	1.195

Level of significant the F - Statistic = 0.168 From the model (5) (Appendix E)  $b_0 = 52.273$  and  $b_1 = - 0.354$  shows the gradient of the regression.

$R = 25.8\%$  show the presence of negative correlation between decedent variable (GTBA) and the independent variable (LQR).  $R^2 = 06.7\%$  shows that is poorly fitted because only 06.7% fell on the regression line while the remaining 93.3% fell both above and below the regression line. Adjusted  $R = 3.3\%$  shows that 3.3% change in ITBA was explained by the explanatory variable (LQR) and the remaining 96.7% was due to exogenous variables (Error terms).

$tb_0 = 2.974$  and  $tb_1 = - 1.44$  shows a negative relationship between GTBA and LQR at 5% level of significance. Durbin Walson (DW) = 1.195 < 2, which show the presence of positive out correlated or positively out correlated. Level of significance of the F -statistic = 0.168, shows that the overall regression was statistically at 5% level of significance. We therefore reject  $H_1$  and conclude that liquidity ratio has not significantly impacted on the growth of total Bank Assets for the period under review or investigation.

#### Summary of Findings

This study is on the effects of monetary policy tools on banks assets portfolio behavior: in Nigeria from (1981-2010).

It is against this background that our study has tried to fill these gaps by adopting a holistic approach that examine the effects of monetary policy on banks asset portfolio behavior; using evidence from the Nigeria economy.

From the results of test of hypotheses and the findings of the research, we summarize as follows:

1. That there is no a long - run equilibrium relationship between monetary policy tools / instruments of Minimum Rediscount Rates (MRR), Cash Reserves Ration (CRR), Liquidity Ratio (LQR), Loan to Deposit Ratio (LDR), Treasury Bill Rate (TBR) and Growth in Total Banks Assets (GTBA) within the period under study.
2. That Cash Reserves Ratio (CRR), Liquidity Ratio (LQR) and Loan to Deposit Ratio (LDR, have no significant signs relationship with Growth rate in total banks assets of banks.
3. The study shows that Minimum Rediscount Rate (MRR) and Treasury Bill Rates (TBR) have no insignificant relationship with the level Growth rate in total banks assets of banks.
4. That with respect to the level of Growth in total banks asset portfolio behaviour are positively correlated but insignificantly related.

### **Recommendations**

Based on our findings, we therefore proffer the following recommendations.

1. Government should as a matter necessity allow an appropriate interplay of the monetary policy interments / tools. That is, effort should be made by government to ensure appropriate policy mix to ensure harmony and enhancing coordination in monetary policies.
2. Government should direct its monetary policy instruments such as Minimum Rediscount Rates (MRR) Cash Reserves Ration (CRR), Liquidity Ratio (LR), Loan to Deposit Ratio (LDR), and Treasury Bill Rates (TBR), towards achieving monetary control and to enhance, overall transformation of the financial sector which will in turn impact on the economy positively as it does in other economies.
3. Government need to intensity actions though its monetary agencies such as Central Bank of Nigeria (CBX) and Ministry of Finance (FMF) to sincerely utilize other tools like special tools, moral suasion and stabilization securities to regulate the banking system for effective and efficient monetary policy functioning.
4. Government should also put in place adequate policy that will encourage good banking habits and investor friendly so as to enhance saving, lending and acquisition of funds by banks in order to increase their assets portfolio mix.
5. Government should also put in place as a matter of fact, sound regulatory and supervisory measures to curtail the activities of informal financial sector so as to pave way for proper functioning of monetary policy indicators.
6. The banks should develop effective strategies to mobilize deposit funds especially from the rural dwellers in order to increase total bank loans and advances, especially savings, cash with CBN and other banks. This is an important determinant of the total banks asset portfolio and credit to the domestic economy.
7. The Governments through its agencies should ensure that monetary policy instruments or tools are both proactive and reactive to ensure bidirectional

causality this capturing appropriate adverse happening in the financial sector which will in turn transform our economy.

## **Conclusion**

On the basis of our findings, the following conclusions were drawn: Following the result reported above, the changes with growth rate in total bank assets portfolio behaviour using evidence from Nigerian economy, as dependent variable is explained by changes in independent variables proxies by monetary policy instruments which shows insignificant relationship between the independent and dependent variables in the long run.. This means that monetary policy instruments exert no much influence on growth rate in total bank asset within the period under study. The study also conclude that, the monetary policy tools / instruments such as cash reserve ratio (CRR), loan to Deposit Ratio (LDR) and liquidity ratio (LR) have insignificant and weak impact on growth rate in total bank asset portfolio behaviour within the period under review. However, the study revealed that monetary policy instruments such as Minimum Rediscount Rate and Treasury Bill Rates (TBR) are not statistically significant with growth in total bank asset portfolio behaviour.

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