THE IMPACT OF MONETARY POLICY ON THE PERFORMANCE OF BANKS IN NIGERIA (1990 - 2002)

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CERTIFICATION

This is to certify that the research thesis was carried out by NDUKWE OKPAN CHUKWU of Financial Management Technology, Federal University of Technology, Owerri; under the careful supervision of Dr A.B.C Akujuobi and is hereby admitted as having partially satisfied the requirements for the award of degree of Master of Business Administration (MBA) in Financial Management.

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DEDICATION

This work is dedicated to God Almighty.

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ABSTRACT

This study investigated the Impact of Monetary Policy on the Performance of Banks in Nigeria. The study made extensive use of secondary data as published by the Central Bank of Nigeria.

Employing the multiple regression models, the study established a significant relationship between monetary policy instruments as a whole and effective bank performance. Specifically, we found that monetary policy through minimum rediscount rate affects the lending rates of banks. Cash reserve requirement impacts significantly on the interest spread of banks. Minimum rediscount rate and cash reserve ratio have no significant relationship with growth rate of bank loans and advances. Using the t-ratio statistical tool, a significant difference was found to exist between the legally required liquidity ratio and actual liquidity ratio maintained by banks in Nigeria.

The study therefore concludes that certain monetary policy instruments like open market operations, minimum rediscount rate, and cash reserve ratio, affect the performance of banks in Nigeria. We therefore suggest that monetary authorities need to re-examine the monetary policy tools at its disposal especially the cash reserve requirement, liquidity ratio, and interest rate policy in order to make them more responsive to effective management of all the functional departments especially as it affects treasury management, credit marketing and administration etc of banks in Nigeria.

CHAPTER ONE

1.1 BACKGROUND OF THE STUDY

Banking is an economic activity, which deals with the intermediation of funds between the surplus units and the deficit units of an economy.

Banks play an important role in the economy through the mobilization of idle resources and the channeling of such resources to profitable investments. They also facilitate the provision of an efficient payment system.

The role of banks in economic development has been richly articulated in the literature. Pioneer contribution of Schumpeter (1934) was of the view that financial institutions are necessary condition for economic development. This view has been variously corroborated by other scholars like Patrick (1966), Goldsmith (1969) and Cameron et al (1972) as noted by Donli (2003).

Now, in view of the importance of the banking sector in economic development and the imperfection of the market mechanism to mobilize and allocate financial resources to socially desirable economic activities, government the world over, do regulate banks more than any other sector in an economy. This underscores the need for monetary policy (MP) and

such other regulatory instruments used to direct the activities of banks in Nigeria.

Monetary policy according to Ogwuma (1997) and CBN (1999) refers to a combination of measures designed to regulate the value, supply and cost of Money in an economy. Monetary policy has continually been applied to the Nigerian economy by the monetary authorities through the ambit of the Central Bank of Nigeria (CBN) in pursuit of certain objectives namely.

- Price level stability
- Creation of employment
- Stimulation of economic growth
- Exchange rate stability and
- External Balance

In attempt to achieve these stated objectives the CBN uses certain monetary policy instruments such as direct policy approach where targets, ceilings and quotas are administratively fixed; and indirect monetary policy approach where market forces are allowed to play a greater role with little or no intervention by the monetary authorities. Indirect monetary policy instruments include;

- Open market operations (OMO)
- Cash Reserve Requirement
- Liquidity Ratio

- Minimum rediscount rate- Interest Rate Policy
- Exchange Rate Policy and
- Moral Suasion.

The targets of these instruments have been to restrict money supply and Bank credit expansion to the desired level of economic activity.

1.2 STATEMENT OF THE PROBLEM

The maintenance of stable macro-economic environment to enhance efficiency in resource allocation for the production of goods and services is the goal of every monetary authority.

The Central Bank of Nigeria in order to achieve its stated policy objectives works through the Banking system as its vehicle of transmission of its policies into the economy. Amarasekara C (2005), Yanchun Zhang and Goefeng Sun (2005)

The Banking system through its strategic position and its money creation ability becomes the centre of monetary policy pronouncements. The CBN has on a yearly basis until 2002 when it adopted an intermediate approach been issuing monetary policy circulars and releases meant to direct Banks on the desired monetary policy measures adopted by government. In addition, Banks are required to furnish the CBN with information regarding their operations through Returns, on-site and off-site super-vision etc

Overall, the Banking system bears the brunt of every monetary policy action.

But Banks are first and foremost business organizations incorporated by investors for the purpose of making profit. This profit objective could be evaluated in terms of improvement in earnings ability, enhanced asset quality, liquidity profile, capital adequacy etc. Above all, granting of credit facilities to different sectors of the economy is the main business of banks through which the above profit objectives could be attained. See Robinson J W (2000), Ezirim B C and Muoghalu M I (2002)

However, most analysis of the impact of monetary policy on the performance of Banks dwell on the expectation of public policy; total credit to the economy divided between Government and the private sector, adherence to stipulated targets in sectoral allocation, interest rates, liquidity ratio, reserve requirement, credit expansion and what have you.

Of important note is that this trend of analysis has failed to recognize the impact of monetary policy on the ability of banks to manage their treasury operations, package credit facilities and administer same to borrowers. Obviously this type of analysis have without doubt left banks at the receiving end of all manner of criticisms in view of the summary interest

rates they charge loan seekers. Thus, there is need for a balanced assessment of the impact of monetary policy on the performance of banks. How for instance, has monetary policy helped banks to create stable, reliable, and affordable credit policies for their customers? Here lies the onus of this study.

1.3 OBJECTIVE OF THE STUDY

The central objective of this study is to investigate the impact of monetary policy on the performance of Banks in Nigeria. The specific objectives include:

1. To determine the nature of relationships between monetary policy instruments namely: minimum rediscount rate, cash reserve ratio, liquidity ratio, open market operations using treasury bills, as well as interest rates on one hand and some operating indices of Banks such as; lending rates, interest spread, growth rate of loans and advances etc
2. To determine whether a significant difference exist between the legally required liquidity reserve ratio and the actual liquidity ratio as maintained by banks.
3. To isolate policy constraints towards the achievement of an effective performance of banks through monetary policy.
4. Finally, to proffer solutions to effective monetary policy for effective bank performance.

1.4 RESEARCH QUESTIONS

We have noted above that studies on the impact of monetary policy on the performance of Banks in Nigeria have mostly been skewed in favour of public policy expectation. To help us in the direction this study chooses to investigate, the following research questions are posed.

1. What is the nature of relationship between monetary policy instruments namely; minimum rediscount rate, cash reserve requirement, liquidity ratio, interest rate, treasury bills rate and bank lending rate?
2. Is there a difference between the legally required liquidity ratio and Actual liquidity ratio of Banks in Nigeria?
3. What are the policy constraints towards effective credit marketing in banks through monetary policies?
4. Is t here a relationship between the minimum Rediscount Rate and Growth in banks loans and Advances?

1.5 HYPOTHESIS

This study is predicated on the following hypotheses

1. There is no significant relationship between cash reserve ratio, minimum rediscount rate and growth rate of loans and advances of banks in Nigeria.

2. There is no significant difference between the legally required liquidity ratio and actual liquidity ratio of Banks in Nigeria.
3. There is no significant relationship between the minimum rediscount rates, cash reserve ratio and bank lending rates in Nigeria.
4. There is no significant relationship between Treasury bill holdings of banks and total bank loans and advances.
5. There is no significant relationship between minimum rediscount rates; cash reserve requirement and bank interest spread.

1.6 SIGNIFICANCE OF THE STUDY

Our goal in this study is to present a frame work to guide monetary authorities in the formulation of monetary policy as it affects the ability of Banks to perform their *intermediation role* in the economy bearing in mind their (banks) obligation to all stake holders in the industry.

This study is also intended to focus attention of researchers to the need for more studies on the corporate performance of Banks vis-à-vis monetary policy guidelines.

1.7 SCOPE AND LIMITATIONS OF THE STUDY

The study covered the years between 1990 and 2002 inclusive. Information on Monetary Policy, Minimum Rediscount Rate, Cash Reserve Ratio, Banks lending Rate, Liquidity Ratio, Banks interest income and

Banks loans and Advance are all restricted to the period under review. The context of our analysis was to discover the effect of monetary policies during this period on effective credit administration by Banks in view of their corporate responsibility to all stakeholders in the industry.

CHAPTER TWO

LITERATURE REVIEW

2.1 BANK/BANKING

Banking as an economic activity has attracted many definitions according to each expert in the field. Paget (1961) defined Bank as “a corporation or person/persons who accepts moneys on current account, pays cheques on such account on demand and collects cheques for customers”. In his own definition, J.W. Gilbert (n.d) see a bank as “a dealer in capital or properly a dealer in money”. Continuing, Gilbert (Ibid) said a bank is an intermediate party between the borrower and the lender. He borrows from one party and lends to another. Meanwhile, DR Hebert Hart (n.d) in his law of banking, defined a Bank as “a person carrying on the business of receiving moneys, and collecting drafts for customer subject to the obligation of honouring cheques drawn upon them from time to time by the customers to the extent of the amount available on their current accounts”. The Bill of Exchange Act (1882) defined Bank as “a body of persons either incorporated or not, who carry on the business of Banking”. While the Paton commission of inquiry (1948) defined a bank as the business of receiving from the public on current account money which is to be repayable on demand by cheque and of making advances to customers”. Finally, the Banking Act of Nigeria (1969) as amended defined Bank as:

"The business of receiving monies from outside sources as deposits irrespective of the payment of interests, and the granting of money loans and acceptances of credit or the purchase of bills and cheques or the purchase and sales of securities for the account of others or incurring of the obligation to acquire claims in respect of loans prior to their maturity or the assumption of guarantees and other warranties for others or the effecting of transfers and dealings and such other transactions as the commissioner may on the recommendation of the central Bank, by order published in the Federal Gazette designate as banking business".

2.1.1 OBJECTIVES/ESSENTIALS OF A SOUND BANKING SYSTEM

Having looked at what experts and the law say a bank is, it is necessary to ask the question: what are the objectives of Banks? According to M.L. Jhingan (2004) there are three main objectives, which a wise bank pursues, and these include, Liquidity, Safety and Profitability. In the same light, Crowther (n.d) recognized certain essentials of a sound banking system. According to Crowder (Ibid) "the secret of successful banking is to distribute resources between the various forms of assets in such a way as to get a sound balance between **liquidity** and **profitability,** so that there is cash to meet every claim, and at the same time enough income for the bank to pay its way and earn profits for its shareholders".

In addition to Liquidity and profitability, there are other important elements that Bankers pursuer and these are: Safety, Stability, Elasticity, Reserve management, and Expansion. We will discuss these in turn.

2.1.1a LIQUIDITY

Liquidity is important because Banks need cash to meet the urgent requirement of its customers. Apart from keeping cash, liquidity could also be achieved by Banks having assets that are easily and readily marketable.

In Nigeria, the monetary authorities do stipulate the level of liquidity Banks are expected to maintain. However, a look at the historical levels of Banks liquidity shows that there has been persistent excess liquidity suggesting that the monetary policy target of 30% liquidity is far below what Banks maintain and this renders the policy ineffective and of no impact on Banks credit administration in Nigeria

2.1.1b PROFITABILITY

One principal objective of Banks is to earn more profit. It is essential for the purpose of paying corporation tax like any other company, pay interest to depositors, wages to the staff, dividend to shareholders and meeting other expenses. So, unless Banks earn profits, they can not perform their

role effectively. Looking at the performance of Banks in terms of their profit over the years, one would be tempted to conclude that Banks have performed well. However, there have been cases of Banks announcing mind boggling/Jumbo profits only to be classified as distressed by the Central Bank of Nigeria months after wards.

The issue here has to do with how monetary policy impacts on the Net interest margin and interest income of Banks. The Monetary authorities usually stipulate the spread between deposit and lending rates of Banks but we find that Banks engage in unwholesome transaction and paper work to boost their earnings and these goes on under the watchful eyes of the monetary authorities.

2.1.1c SAFETY/CAPITAL REQUIREMENT

Banks keep the deposits of the people. Therefore, it must ensure the safety of their money. This has resulted to Banks being asked to maintain adequate capital to cushion any losses that may arise from lending activities. It has also made it compulsory for Banks to make full provisioning for perceived risk of default on specific credit activities. But what worries one is the discovery that rapid changes in Government polices constitute about 11% of the distress in the Banking system. Added to this is the 7% caused by undue reliance on Forex by Banks and 17%

coming from lack of adequate supervision. CBN EFR VOL 8 (1997) notes that these sum up to 35% being contributed by the Monetary authorities to Bank distress in Nigeria.

Looking at the quality of Banks Assets, M.F Otu and M.K. Tule (2002) shows statistically that a greater percentage of loans and advances made by Banks between 1990 and 2002 were classified as bad and doubtful. Again this (Bad loans) constitute about 20% of Bank distress in Nigeria (CBN EFR 1997).

Another area that constitutes danger to the safety of Banks is fraud. It is true that the CBN approves the Board of directors of Banks and follows certain criteria as set out in the CBN and Bofi Decrees. These factors include: Competence, experience, integrity etc. Nevertheless, these factors have not been able to translate into effective internal control system that detects and prevents fraud in Banks. For instance, the report on distress in Banks, "A general overview of the role of Directors and Auditors" published in the CBN EFR Vol 8 No.3 page 83 identified fraud as causing 17% of the distress in the Banking Industry. Again, from 1989 to the present, though the number of Bank staff involved in fraud and forgery has reduced but the total amount involved has continued to rise indicating that person entrusted with high responsibility are involved.

2.2 MONETARY POLICY

As stated earlier in chapter one, monetary policy according to Ogwuma (1997:3) refers to a combination of measures designed to regulate the value, supply and cost of money in an economy. It is also the act of controlling the movement of monetary and credit aggregates in the pursuance of stable prices and sustainable economic development, (Ojo (1992). Further more, as indicated by Uduebo (1985:5) monetary policy may be described as measures which deal with the discretionary control of money by the monetary authorities with a view to achieving stated economic objective. It involves policy actions designed to influence the cost and availability of credit.

Over the years, Nigeria has used two approaches to monetary policy. First, the monetary authorities have used direct monetary policy a situation where monetary aggregates are fixed by fiat of government. This includes fixing of interest rate levels, credit expansion by banks, sectoral allocation of credit and other areas of concern to the monetary authorities. This was before 1986.

However, with the advent of deregulation from 1986 the authorities tended towards indirect monetary policy approach where market forces are

allowed to be the driving and equilibrating factor in determining monetary aggregates though with occasioned interference by the authorities.

Some of the instruments of indirect monetary policy include:

- Open market operation
- Reserve Requirements: Liquidity Ratio, and Cash Reserve Ratio,
- Minimum Rediscount Rate or Interest Rate Policy
- Exchange rate Policy
- Prudential guidelines etc.
- Moral suasion

We shall examine these in turn

2.2.1 OPEN MARKET OPERATIONS

This involves the exercise of the discretionary powers of the central Bank to purchase or sell in the financial markets government or other eligible securities from or to the private sectors.

Monetary policy through OMO influences bank credit operations through causing changes in the cost and availability of credit. For instance, in an inflationary situation the Central Banks can sell securities and thereby reduce the cash position of banks and this influences the banks' ability to expand credit. The reverse is the case as with a deflationary scenario.

The Central Bank buys securities from banks thereby releasing money into the system which enables banks to expand their credit operations.

Omo is the major instrument of indirect monetary policy control in Nigeria and was introduced at the end of June 1993 and since then has conducted its activities wholly on the Nigeria Treasury Bills.

Proponents of Omo agree that it is capable of achieving desired results without necessarily destabilizing the system. However, in practice, Olekah (1992) observes that it may not be quite easy to determine with precision the level of Omo that will be consistent with the general economic goals of the country. Also, Nnanna (2002) notes that targeting Omo begins with the computation of the optimal level of liquidity in the Banking system that will support the level of economic activity envisaged by the monetary authorities and thereafter the estimation of the total supply of bank reserves leading to the sterilization of any excess supply using Omo. To this end, Nnanna (Ibid) and Olekah (Ibid) agree that this technical problem of estimating the level of liquidity is compounded by the fact that much of the excess liquidity are outside the banking system. Thus, they conclude that Omo puts unnecessary pressure on the banks capacity to perform its business obligations to its shareholders.

According to Uremadu S.O quoted in International Review of Business Research Papers (2007), Bank investments in Government securities, an indirect credit extension, showed a negative impact on commercial bank's credit to the domestic economy. He also argue that government should lower minimum rediscount rate and cash reserve ratio to enable banks moderate their balances with the central bank of Nigeria in a bid to create additional credit in the system at affordable lending rates.

2.2.2 PRUDENTIAL QUIDELINES:

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. Key elements of prudential guidelines remove some discretion from bank management and replace it with rules in decision making. In other words, bank portfolio management in response to policy action is affected by monetary policy stance.

2.2.3 WHAT IS THE CREDIT CHANNEL OF MONETARY POLICY TRANSMISSION?

Monetary policy works in part by altering credit flows. The use of legal reserve requirements provide monetary authorities with considerable leverage over the quantity of funds that banks may maintain, just as open market sales reduces the real quantity of deposits banks can issue. This in

turn induces banks to contract or expand lending which ultimately constrain or increase the spending capacity of borrowers. In addition to affecting short term interest rates, monetary policy affects aggregate demand by affecting the availability or terms of new credit.

The credit channel of monetary policy generates direct impact on aggregate demand and output and this is supported by certain fundamental assumptions. The underlying premise is that bank loans are an important source of funds for business activity, and that there is no perfect substitute for this kind of credit such as certificates of deposit or commercial papers or other sources of funds. Second, the central bank in practical terms is in a position to constrain bank's ability to lend, and finally, there exists bank dependent businesses that are unable to substitute credit from other financing sources. If these conditions exit, it is assumed that banks cannot just reduce commercial papers in order to keep the supply of loans at the level prior to the tightening or expansion signals in monetary policy; and businesses are unable to offset at no extra costs a decline in loan supply by issuing more papers, or effecting any substitution.

Thus, the credit channel presupposes that banks play an important role in the financial system. The credit channel at a glance is presented below:

Contractionary Monetary Policy→ Supply of Bank Loans (Reduce) →Investment (Reduce) →Employment (Reduce) →Output (Reduce)

Expansionist Monetary Policy →Supply of Bank Loans (Increase) →Investment (Increase) →Employment (Increase) →Output (increase)

2.2.4 RESERVE REQUIREMENT (RR)

Reserve requirement as stipulated by the Central Bank is made up of the cash Reserve Ratio (CRR) and the Liquidity Ratio (LR). Cash Reserve Requirement is the proportion of the total deposit liability of a bank which is deposited with the CBN or kept in the Banks' vaults. On the other hand, the liquidity Ratio refers to the proportion of a bank' liquid assets to their total deposit liabilities.

Reserve Requirement has been used over the years as a tool for monetary management. Nevertheless, there are growing arguments against the continued use of RR as Otu and Tule (2002:23) has proposed that there is need for a drastic reduction in the use of RR because it is a weak tool of monetary policy under changing structure and financial system innovations. They add that reserve requirement has significant cost implications on Banks in Nigeria and that its potency as a tool of monetary

management has been weakened as the targeted reserve does not reflect the total reserve level in the system.

Above all, King (1994) argue in his study of “Monetary Policy instrument in the U.K” that at 0.35 cash ratio, reserve requirement serves no monetary policy purpose but its sole function is to provide income for the Bank of England.

Following these criticism, countries like Belquim, Denmark and Sweden have discarded the use of reserve requirement with England lowering theirs to an insignificant level. Moreover, Stevens (1993) also recommended the disuse of reserve requirement arguing that it is a serious distortion in an increasingly competitive global financial environment. He further stated that RR impacts negatively on the efficiency of Banks since RR attracts no interest. Add to this Nanna’s (2002) assertion that limiting the ability of Banks to create credit through RR is equal to sending Banks out of Business. He notes that Banks are in business especially “lending Business”.

According to Clouse (1997) controlling only bank credit may place banks at a serious competitive disadvantage relative to other lenders. This is supported by Sellon and Weiner (1997) who argue that RR is an inequitable tax on the banking system whose removal will improve bank

profitability thereby allowing banks to compete on a more even terrain with other financial institutions. Thus, Kasman's (1993) argument that RR should no longer be relied on where sound monetary policy is being articulated is indicated.

In addition, Otu and Tule (2002) has shown how monetary Policy through the use of Reserve Requirement has lead Banks into unethical practices all in the bid to circumvent the requirements. The habit of rendering inaccurate statutory returns to the Central Bank by deposit money banks often is with a view to lowering their deposit base in order to pay less cash reserve and deposit insurance premiums.

Again, banks make back-to-back placements to bolster their liquidity positions without actually moving funds. Thus, the inter-bank takings from other banks, money-at-call with banks, placements with discount houses and unclear effects accounts have been grossly abused. The question then is: could a good monetary policy tool engender the system? The acceptance by the monetary authorities to start paying 4% interest on reserves above 8 percent is an indication that RR is a great burden on the performance of insured banks in Nigeria.

2.2.4a RESERVE REQUIREMENTS AS A HIDDEN TAX ON BANKS

William G. Laffer III (1991) notes that a major factor contributing to the problems facing banks is the hidden tax that reduces the profitability of the banking system and encourage banks to make riskier loans. There are in fact many such taxes, including minimum capital requirements and the cost of complying with voluminous government mandated paper work requirements. But as Laffer (1991) concluded, the most significant hidden take arise from reserve requirement.

Furthermore, Alan GreensPan (1992) former chairman Federal Reserve Bank of America agree that the requirement that banks hold non-interest bearing reserves with the Fed amounted to a tax on banks. Pursing the argument, if banks do not have to hold as much in non-interest-earning reserves, they would likely either lend the excess out or acquire new securities. In either case, such action should increase interest income and improve the profitability of banks because it would result in a large asset base for which banks would earn their spread.

2.2.4b RESERVE REQUIREMENT AND BANKING DISTRESS

One cardinal defence of reserve requirements is that it improves the safety and soundness of depository institutions. According to this school of thought, the higher the RR the safer the banks are held to be. However, Scott E Hein and Jonathan D steward (2002) has challenged the argument

that lower reserve requirements lead to financial distress. In their study, “Reserve Requirement: A modern perspective, they found that the 1992 reduction in RR by the Federal Reserve Bank of America lead to a reduction in the proxies for default risk in Banks. Thus, they concluded that RR is not a very useful monetary policy tool and advocated for its disuse.

Again Hein and Steward (Ibid) observed that the belief that RR is to provide liquidity for financial institutions as they deal with depositors that wish to withdraw funds from their account and reduce their (banks ;) overall risk of default can be misleading. They argue that RR does not provide any substantive liquidity because banks are required to replenish them prior to the end of a two week maintenance period if they are depleted below the required level. Following this, they argue that RR is more appropriately thought of as a liability to the institutions holding them rather than an asset.

In his own contribution, Alan Greenspan (Ibid) states that greater RR is likely to reduce the profitability of banks by increasing the proportion of non-earning assets they must hold. Following this, it is observed that with a given dividend payout policy for a bank, reduced profitability means that additions to equity capital will be lower and banks will not be as well capitalized as they would have been.

In another dimension, Demirguc-Kent and Detra-giache (1992) find that the existence of explicit deposit Insurance is positively associated with the probability of banking distress. In support of this, Bartholdy, Boyle, and Stover (1997) observe that deposit insurance has a theoretically ambiguous effect on interest margins.

Furthermore, Brewer and Moudschear (1994) notes that deposit insurance creates incentive for banks to acquire risky assets. In addition, Demirguc-Kunt and Huizinga (1993) show that deposit insurance is an important determinant of banks stock prices. These situations they argue constitute moral hazards and the associated risk lead banks' creditors to demand higher interest rates thereby depressing net interest margins and profitability. Obviously, it is no longer news that RR has been placed on the hot seat as search lights are beamed on it by researchers. Fabozzi and Thurston (1986) examined how differences in RR are priced into money market instruments. Kolari, Mohajan and Sounders (1988) study the impact of announced changes in RR on bank stock prices using an event study method.

More researchers in this area include- Slovin, Sushka, and Bendeck (1990); Osbarne and Zaher (1992); Cosimano and Mcdonald (1998), and

Hein and Steward (2002). All provide evidence suggesting that changes in RR lead to changes in Bank stock prices as well as the fact that under-remunerated reserves lower a bank's net interest income and profitability.

Recall that RR as a hidden tax increases the cost of funds banks hold. Black (1975); Fabozzi and Thurston (1986) state that depositors bear the RR tax in the form of lower yields or reservable securities. If this is so, does it not act as a disincentive to savers? Fama (1985) and Jones (1987) while not agreeing with the above, charge that it is the borrowers that bear the RR tax on banks.

Again will it not amount to depriving profitable investments of required fund when investors are crowded out?

Finally, as Ash Demirquc-Kunt and Hary Huizinga (1993) advised, a prerequisite to formulating effective banking policies is thus to understand the determinants of banks profitability and interest margins. As financial intermediaries banks play a crucial role in the operation of most economics. Recent research as surveyed by Levine (1997) shows that the efficiency of financial intermediation can affect economic growth. Crucially, financial intermediation affects the net return to savings and the gross return to investments. The spread between these two returns mirrors bank interest margins. Thus banks interest spreads could be interpreted as an indicator of the efficiency of the banking system.

Interest rate spreads, or gaps between lending and deposit rates are due to market frictions such as transaction costs and information asymmetries. Transaction costs associated with screening and monitoring borrowers and processing savings and payments services drive a wedge between the interest rate paid depositors and the interest rate charged to borrowers.

Writing on the impact of legal and regulatory environment on financial intermediation in an emerging sub-Saharan economy, Ezirim B.C and Moughalu M.I (2002) found that the legal and regulatory environment exert a very significant effect on financial intermediation operations of commercial banks in Nigeria.

2.2.5 INTEREST RATES

Generally, interest rates influence very important decisions of economic agents in an economy. These decision areas include consumption, savings, borrowing and investment. Thus, interest rates can be seen as: One; a return on financial assets which serve as incentive to savers, making them defer present consumption to a future date. The relevant interest rates in this case are the deposit rates adjusted for expected inflation. In this connection, interest rates affect the availability of savings, and to the extent that deposit rates vary depending on the maturity of the financial assets, they also influence the allocation of current savings among investment assets.

Two, interest rates is also a cost of capital. Again this affects the demand for and allocation of loan able funds. The applicable rate of interest in this case is the bank-lending rate.

Changes in the bank-lending rate affect the cost of capital which influences investors' ability and willingness to borrow for investment in machine and equipment. In this way, the lending rate (cost) could influence growth in financial instrument, output and employment.

In summary, interest rate is the price paid by borrowers for the use of credits and the return to lenders for parting with liquidity.

2.2.5a Role of Interest Rates

The primary role of interest rates is to help in the mobilization and efficient allocation of the financial resources in a given economy.

The interest rate is crucial in financial intermediation process which involves the transfer of funds from the surplus units of an economy to the deficit units. Apart from its allocative function, the interest rate constitutes a major tool for monetary management. The main objective of interest rate policy in Nigeria include

1 The moderation of inflation

2 Reduction of pressure in the balance of payment

3 Achieving exchange rate stability

4 Stimulation of increased financial savings and investment

5 The promotion of macroeconomic and financial sector stability.

2.2.5b Determinants of Interest Rates

Generally, the behaviour of interest rates in an economy is influenced by a number of factors which include market forces of supply (Savings) and demand (Investment); inflation, governments fiscal operations, monetary policy stance, taxation and market expectations.

In recent times, the influences of the oligopolistic structure of the banking system and the incidence of distress borrowing by some illiquid institutions have adversely affected interest rate developments in Nigeria.

SAVINGS/INVESTMENT

The price of any factor of production-land, labour, and capital- in a market system is determined by the forces of supply and demand, savings constitute the supply of credit while investment represents the demand for credit thus, an increase or decrease in either of the two partly determines the level of interest rates.

INFLATION

Inflation reduces the nominal value of financial assets; hence lenders tend to increase their real rate of interest by their own expected rate of inflation in order to compensate for the loss in real value of their money arising from the inflation. Borrowers are willing to borrow when it is realized that goods purchased through a loan will appreciate by a factor of their expected inflation

Government Fiscal Operations

Government demands credit to finance fiscal deficits. The private sector is crowded out in the process, particularly when deficits are financed by the banking system, thus exerting an upward pressure on interest rates.

MONETARY POLICY

In addition to government fiscal operations, monetary policy stance through expansions and contractions in the money stock can influence interest rates. Thus, a restrictive monetary policy may lead to a rise in interest rates while an expansionary stance may result in lower rates of interest

TAXATION

The combined effect of income tax on both the borrower and lender raises market interest rates as the borrower's demand for credit rises and the lender's supply of loan able funds falls and vise versa.

MARKET EXPECTATIONS

Sustained depreciation of the exchange rate leads to speculative activities in the foreign exchange market such that expectations about future depreciations and inflation affect pricing decisions of economic agents.

OTHERS

Other factors that affect interest rates include the term structure differentials between domestic and international interest rates; oligopolistic structure of the inter-bank market and insolvency of financial institutions

About the term structure, it is obvious that long-term funds attract higher interest rates than short-term funds.

2.2.5c INTEREST RATES MANAGEMENT IN NIGERIA

The management of interest rate in Nigeria historically, has involved direct and indirect approaches. The direct approach entails the administrative fixing of the lending and savings rates, while the indirect approach relies on the interplay of market force.

Prior to the structural Adjustment Programme (SAP) in 1986, the level and structure of interest rates were administratively determined by the Central Bank of Nigeria (CBN) with periodic Adjustments based on informed policy decisions.

At that time, the major reasons for administering interest rates were the desire to

1 Stimulate investments in the preferred area

2 Promote the orderly growth of the financial markets

3 Restrain inflation and

4 Lessen the burden of domestic debt service on government

During this period, the minimum rediscount rate (MRR)- the rate at which the CBN lends to banks- which is the nominal anchor of CBN's interest rate policy did not play any significant role in influencing the cost and availability of credit due to its rigidity.

Overall, the low interest rate regime that ensued resulted in inefficient production and consumption behaviour.

Following the introduction of SAP in 1986, and in line with the general framework of deregulating the economy to enhance competition and efficient allocation of resources, the monetary authorities adopted a market based interest rate regime in August 1987. However, the MRR, which

influences other rates continued to be determine by the CBN in line with the overall economic conditions. The lack of responsiveness of deposit and lending rates to market fundamentals particularly, the decline in inflation in 1990 and the increase in domestic liquidity compelled the authorities in 1991 to place ceilings of 21.0 percent on lending rate and a minimum deposit rate of 13.5 percent. The re-introduction of direct control was in response to market failure. The ceilings were removed in 1992 and 1993 but were reintroduced in 1994 and 1995 following the volatility and surge in the rates in 1993.

In October, 1996, interest rates were once again fully deregulated with the banks given freedom to determine their interest rates, after negotiation with their customers.

The policy of interest rate deregulation has been retained since them. The CBN however, retained the discretionary power to intervene in the money market to ensure orderly developments in interest rates in particular and in the market in general. In this regard, the MRR is usually adjusted up or down to signal the policy stance of the monetary authorities and to indicate the desired direction of interest rate changes.

Ab-initio, one would have noticed the unstable nature of Nigeria's interest rate policy. One would conclude by asking what kind efficient performance are Banks expected to give, given this staccato monetary policy stance?

2.2.5d RECENT DEVELOPMENT IN INTEREST RATES

A review of interest rate development since 2001 shows that bank deposit and lending rates as reported by the banks increased during the first half of the year, reflecting largely the effect of the monetary policy actions taken by the CBN to stem the liquidity expansion in the economy.

These include:

1 The upward review of the MRR from 13.5 percent to 18.5 percent

2 The increase in cash reserve from 10.0 to 125 percent

3 The increase in liquidity ratio from 35.0 to 40.0 percent.

Besides monetary policy actions, the following factors also contributed to the upward movement of interest rates.

1. The increased pressure on the domestic price level induced by rising liquidity in the banking system due to the expansionary fiscal stances of the three tiers of government

2 Distress borrowing in the inter-bank market due to many of the banks' illiquidity stemming from over-trading

3 Strong demand for foreign exchange by the economic agents which put pressure on inter-bank rates

4 The Oliqopolistic structure of the baking system and the deregulation of interest rates which conferred undue discretion on key market

players in pricing their funds as well as the arbitraging activities of speculators.

While the bank's average lending rates rose steadily from 21 to 28 percent, available data indicated that banks' average savings deposit rate fell from 4.9 percent in December 2000 to 4.6 % in January 2001 and only rose marginally to 4.8% in June 2001.

The average rates on time deposits of various maturities however, which ranged between 6.8 – 11.3 percent in December 2000 rose steadily to 10.1 – 14.6% in June.

Overall, the spread between the bank's savings deposit and maximum lending rates widened from 20.9 percentage point in December 2000 to 23.6 percent in 2001. Similar trends were observed in the movements in inter-bank rates with average rate rising from 13.5 percent in December 2000 to 26.3 % in June 2001.

However, with inflation estimated at 17.6 percent at end June 2001, all deposit rates were negative in real terms. This development has serious implication on savings, investment and growth.

In response to these developments, the CBN continued to use moral suasion through the Bankers committee, the monetary policy forum and

other fore to a try to influence the banks to operate professionally as well as to reduce the wide spread between the deposit and lending rates.

The introduction of CBN certificates, which was aimed at enhancing liquidity management, provided an investment outlet to shield high net worth savers from the low deposit rates of the deposit money banks and to compel banks to review their interest rate structure.

Finally, the performance of interest rate regimes in Nigeria has as the occasion demands been partially successful. The administrative of interest rates though resulted in inefficient production and consumption, it impacted on those sectors for which the policy was designed in the first place such areas like Agriculture manufacturing, housing got the desired attention. But for lack of proper implementation and monitoring of allocated credit to these areas, the policy failed to achieve its total objective of macro economy stability.

As regards the market driven interest rate regimes, it is the intermediates of credit-Banks-that has so far benefited from high lending rates while the saves are subjected to low and ridiculous deposit rates. Borrowers on the other hand are finding it difficult to keep to payments agreements due to the high cost of funds and thus investment opportunities are allowed to fritter away. All in all, no economy thrives on any one interest regime alone.

A combination of the regimes is desirable if the monetary authorities wish to achieve the overall interest rate policy objective of the country.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This study examined the impact of monetary policy on the performance of Insured banks in Nigeria. In this chapter we discuss the research design, the sampling procedure as well as the presentation of data collection method and operational measures of variables used in the study. Finally, the statistical tools used in analyzing the data are presented.

3.2 THE DESIGN

The study is an analytical study of the existing data to reveal the impact of monetary policy on banks performance variables.

3.3 SOURCES OF DATA

The data for this study were obtained mainly from the publications of the central Bank of Nigeria (CBN) such as: statistical Bulletins, Economic and Financial Review, Annual Report as well as those of the National Deposit Insurance Corporation (NDIC) especially from their quarterly.

3.4 MEASUREMENT OF VARIABLES

Cash Reserve Requirement – As published by the CBN

Bank Lending Rate (Maximum) – As published by the CBN

Growth Rate in Banks Loans and Advances – CBN

Liquidity ratios (Targeted and Actual) – As published by CBN

Minimum Rediscount Rate – As published by CBN

3.5 MODEL SPECIFICATION AND ANALYTICAL PROCEDURE

Two statistical tools were applied in this study. These include

1. Multiple Regression analysis and

2 T test.

3.6 MULTIPLE REGRESSION ANALYSIS

This measures the relationship existing between two or more variables especially between a given dependent variable and two or more independent variables in a given regression function.

Here in this study, we find the relationship between Bank Lending rate (dependent variable) and Minimum Rediscount Rate as well as cash reserve requirement (independent variables). Also, using multiple regression analysis, the relationship between growth rate of Bank Loans and Advances with respect to Minimum Rediscount rate, Cash Reserve ratios were explored.

With these variables, we observe that the relationship between the dependent variable (Y) and a set of K independent variables, X_1, X_2, ……. X_k can be expressed as:

$Y_1 = bo + b_1 X_1 + b_2 X_2 + \ldots\ldots\ldots\ldots + b_k X_k + et$

Where

Y_1 = dependent variable

B_1, b_2, b_k are independent variable

e_t = the random error term.

Bo = the intercept.

In this equation bo is called the intercept and represents geometrically the value of y where the regression surface crosses the y axis, or substantively, the expected value of y where x does not contribute at all in the determination of y. b_1, b_2 in the equation are slopes of the regression lines and represents the rate of change of y with respect to change in X_1 and X_2 respectively, when either X_1 or X_2 are held constant.

To estimate the Bo, b_1, b_2 coefficients, the following equations are used.

$$b_1 = \frac{(\sum x_1 y)(\sum x_2^2) - (\sum y x_2)\sum x_1 x_2)}{(\sum x_1^2)(\sum x^2) - (\sum x_1 x_2)^2}$$

$$b_2 = \frac{(\sum YX_2)(\sum x_1^2) - (\sum y\, x_1)(\sum x_1 x_2)}{(\sum x_1^2)(\sum x_2^2) - (\sum x_1 x_2)^2}$$

$$b_0 = \bar{y} - (b_1 \bar{x}_1 + b_2 \bar{x}_2)$$

Where x_1, x_2 and y are deviations such as $\bar{y}$ - y, $\bar{x}_1$ - x_1, and $\bar{x}_2$ - x_2

Computing the deviations of data, we have:

$\sum y^2 = \sum y^2 - 1/n\ (\sum y)^2$

$\sum x_1^2 = \sum x^2 - 1/n\ (\sum x_1)^2$

$\sum x_2^2 = \sum x_2^2 - 1/n\ (\sum x_2)^2$

$\sum x_1 x_2 = \sum x_1 x_2 - 1/\ n\ (\sum x_1 \sum x_2)$

$\sum x_1 y = \sum x_1 y - 1/n\ (\sum x_1 \sum y)$

$\sum x_2 y = \sum x_2 y - 1/n\ (\sum x_2 \sum y)$

Further measures include the evaluation of how well the regression equation explains the variations observed in the dependent variable. To do this we used the coefficient of multiple determinations R^2.

This is symbolically expressed as:

$$R^2 = \frac{b_1 \sum X_1 Y + b_2 \sum X_2 Y}{\sum Y^2}$$

OR

$$R^2 = \frac{\sum (Yp - \bar{Y})^2}{\sum (Y - \bar{Y})^2}$$

Where $\sum (Y_P - \bar{Y})^2$ equals the regression sum of squares and $\sum (Y - \bar{Y})^2$ equals the total sum of squares.

R^2 here indicates the proportion of variation in Y explained by all the independent variables.

To discover whether the relationship between the dependent and independent variable are significant, the F-test was used and is presented in the table below.

Table 3.0 f- test table

SOURCE OF VARIANCE	**SUM OF SQUARES (SS)**	**DEGREES OF FREEDOM (FD)**	**MEAN SQUARE (MS)**	**VARIANCE RATIO (F-RATIO)**
Regression	$SSR = \sum Y^2 R^2 (y^2 R^{2)}$	K	$MSR = \frac{SSR}{K}$	$F^* = \frac{MSR}{MSE}$
Error	$SSE = SST - SSR = \sum Y^2 (1-R^2)$	n-k-1	$MSE = \frac{SSE}{n-k-1}$	
Total	$SST = \sum Y^2$	n-1		

Where:

SSR = Sum of squares of Regression

SSE = Sum of squares of Error

SST = Sum of Squares of Total Variation(Y)

K = Number of independent Variables X_1X_2

n = Number of Observations in years.

3.6.1 DECISION RULE

The decision here is to accept the hypothesis if calculated f* ratio is less than the critical f ratio at n-k-1 degrees of freedom, with 95% confidence interval, otherwise it is rejected.

3.6.2 COMPUTER SOFTWARE USED

Our tool of analysis here is the statistical package for social sciences (SPSS).

3.7 T- TEST FOR TEST OF DIFFERENCE BETWEEN MEANS

This tests the difference between only two variables and is represented below as:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\dfrac{\sum(X_1 - X_1)^2 + \sum(X_2 - \bar{X}_2)^2}{n_1 + n_2 - 2} \cdot \dfrac{(n_1+n_2)}{n_1 n_2}}}$$

Where

X1 = the mean of observations for legally required liquidity ratio

X2 = the mean of observations for actual liquidity ratio

n_1, n_2 are number of observations for each variable X_1, and X_2 respectively.

The decision rule here will be to accept the null hypothesis if calculated t is less than the critical t at the .05, $n_1 + n_2 – 2$ degrees of freedom.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The purpose of this chapter is to analyze data collected using the techniques described in chapter three.

4.2 DATA PRESENTATION

TABLE 4.1 Yearly data for bank lending rates, cash reserve ratio, minimum rediscount rate, target liquidity ratio, actual liquidity ratio, bank interest spread and growth rate of bank loans and advances.

YEAR	TARGET LIQUIDITY RATIO %	ACTUAL LIQUIDITY RATIO %	BANKS' LENDING RATES %	CASH RESERVE RATIO %	MINIMUM REDISCANT RATE %	Bank Interest Spread	GROWTH RATE OF BANKS LOANSAND ADVANCES
1990	30	443	26.5	7	18.5	4.3	19.8
91	30	38.6	20.8	3	15.5	5.9	35.3
92	30	29.1	25.7	3	17.5	10.7	- 26.9
93	30	42.2	36.2	6	26.0	6.7	34.3
94	30	48.5	20.8	6	13.5	7.2	- 2.3
95	30	36.5	20.8	6	13.5	12.9	- 2.3
96	30	40.1	26.4	8	13.5	12.3	76.7
97	30	37.5	20.3	8	13.5	11.6	46.7
98	40	46.8	21.8	12	13.5	7.4	126.1
99	40	50.9	22.5	12	20.7	15.1	21.6
2000	40	56.2	26.4	12	14.0	14.8	42.0
01	40	54.7	31.2	12.5	20.5	12.0	36.5
02	40	58.2	25.7	12.5	16.5		15.7

Source: Central Bank of Nigeria.

4.2 TEST OF HYPOTHESES

4.2.1TEST OF HYPOTHESIS ONE

4.2.2 TEST OF THE INFLUENCE OF CRR AND MRR ON BANK LENDING RATES

Ho: There is no significant relationship between the central Bank of Nigeria Minimum Rediscount Rate; Cash reserve ratio and Banks'

Lending rates

The test-statistic used is the multiple regression analysis and the method and application has been explored in chapter three.

The rule here at 0.05 level of significance n-k-I degrees of freedom states that if the computed f* ratio is less than the critical f ratio the null hypothesis will be accepted otherwise it is rejected.

The regression results using SPSS statistical package is presented below.

Table 4.2 Hypothesis One Result / Output.

0.787	R
0.619	R^2
3.163	Standard error of estimate
13	Observations
MRR and CRR	predictor variables
Bank lending rate	dependent variables

Table 4.2 cont.

Variables	Coefficients		Std Error	T(df = 10)	Significance
Intercept	B_0 = 8.215		4.520		
X_1 = CRR	B_1= 0.142		0.258	0.549	0.598
X_2 = M R R	B_2 = 0.937		0.235	3.981	0.003
	ANNOVA	TABLE			
Source	SS	DF	MS	F	Sig.
Regression	162.482	2	81.241	8.120	0.008[a]
Residual	100.047	10	10.005		
Total	262.529	12			

From the SPSS output reproduced in the table above, using the three coefficients, the regression equation is thus given as:

$$\hat{BLR} = 8.215 + 0.142\ CRR + 0.937\ MRR$$

Where

BLR = Expected bank lending rate given (CRR, and MRR)

CRR = Cash reserve requirement

MRR = Minimum rediscount rate

4.2.1 TEST OF MODEL SIGNIFICANCE (ANOVA METHOD)

The decision rule as stated above says if the calculated F* ratio is less than the critical F - ratio; the null hypothesis will be accepted otherwise it is rejected.

From table 4.2 above, we find that:

Calculated F* – ratio = 8.12

Critical F– ratio = 4.10

Degrees of freedom = n - k- 1 = 10

Where n= number of observations = 13, k = number of independent variables = 2

Level of significance = 0.05

Comparing calculated and critical f ratios, we find that F* = 8.12 > 4.10 at $F_{0.95}^{(2, 10)}$

Thus we reject H_0 and conclude that there is a significant relationship among the variables under investigation

4.2.2 TEST OF MODEL SIGNIFICANCE – THE COEFFICIENT OF DETERMINATION R^2, APPROACH

Another way to determine the model significance is through the coefficient of determination R^2, test. This method is adopted in calculating the F- ratio using the following formula:

$$F - \text{Calculated} = \frac{\{R^2 / (K-1)\}}{\{(1 - R^2) / (N-K)\}}$$

Where;

$R^2 = 0.619$

$K = 3$

$N = 13$

Substituting in the equation above, we have:

$$F - \text{Cal} = \frac{0.619 / (3-1)}{[(1 - 0.619) / (13 - 3)]}$$

$= 0.3095 / (0.381 / 10)$

$= 0.3095 / 0.0381$

F– Cal = <u>8.123</u>

But F ratio tabulated = 4.10 at $F0.95^{(2, 10)}$

Therefore we reject Ho and conclude that there is a significant relationship among the variables under investigation.

4.2.3 TEST OF THE INFLUENCE OF EXPLANATORY VARIABLES

To find which of the variables contributed to the significance of the equation, we tested the following hypotheses using t ratio analysis:

a. $H_0B_1 = 0$ against $H_AB_1 \neq 0$

b. $H_0B_2 = 0$ against$H_AB_2 \neq 0$

From table 4.2, we find calculated t ratio for both variables to be:

t_1 CRR = 0.549

t_2 MRR = 3.981

From the t- distribution table, at 0.05 level of significance and 10 degrees of freedom tabulated t = 2.23.

Comparing calculated t_1 with tabulated t for $H_0B_1 = 0$ against $H_AB_1 \neq 0$ we find that calculated $t_1 = 0.549<2.23$ at t 0.05 $^{(10)}$). Thus we accept H_0 and conclude that the inclusion of Cash reserve requirement is not significant. Again for $H_0B_2= 0$ against $H_AB_2 \neq 0$ we find that calculated $t_2= 3.981>2.23$ at t0.05 $^{(10)}$. Here, we reject H_0 and say that the inclusion of minimum rediscount rate in the relationship is significant.

4.3 TEST OF HYPOTHESIS TWO

TEST OF THE DIFFERENCE BETWEEN LEGALLY REQUIRED LIQUIDITY RATIO AND ACTUAL LIQUIDITY RATIO OF BANKS IN NIGERIA

The hypothesis to be tested here states that:

Ho: There is no significant difference between the legally required liquidity ratio and the Actual Liquidity ratio of Banks in Nigeria.

Table 4.3.1 Hypothesis Two Results/Output

Variable	no	DF	STD	Mean	Std error mean
X_1(Target liquidity ratio	13	12	5.064	33.846	1.404
X_2 Actual liquidity ratio	13	12	8.653	44.892	2.40

Source: SPSS OUTPUT

Difference in means $X_1 – X_2$ = - 11.046

Std error paired mean = 1.518

t – Calculated = (difference in means/ std error paired mean)

t = -11.046/1.518

t = -7.277

Our test statistic here is the student t – test

Degrees of freedom = $n_1 + n_2 – 2$

df = 13 + 13 – 2 = 24

Calculated t^* = -7.277 P <. 05 (df = 24, two tailed test).

Critical = t = ± 2.064

Since calculated t* -7.277 falls outside the acceptance region of ± 2.064 we reject H_0 and conclude that there is a significant difference between target liquidity ratio and actual liquidity ratio as maintained by Banks in Nigeria.

4.3.3 TEST OF HYPOTHESIS THREE

TEST OF THE INFLUENCE OF CRR AND MRR ON BANK INTEREST SPREAD

Ho: There is no significant relationship between the cash reserve requirement as well as CBN Minimum Rediscount Rate and Banks Interest Spread.

The test-statistic used is also the multiple regression analysis and the method and application has been explored in chapter three.

The rule here at 0.05 level of significance n-k-I degrees of freedom states that if the computed f* ratio is less than the critical f ratio the null hypothesis will be accepted otherwise it is rejected.

The regression results using SPSS statistical package is presented below. Please see the print out in appendix 4.

Table 4.4.1 Hypothesis three Result / Output.

0.727[a]	R
0.528	R^2
2.752	Standard error of estimate
12	Observations
MRR and CRR	predictor variables
Bank interest spread	dependent variables

Table 4.4.1 Hypothesis three Result / Output cont.

Variables	Coefficients		Std Error	t(df = 10)	Significance
Intercept	B_0 = 4.262		3.934		
X_1 = CRR	B_1= 0.718		0.226	3.174	0.011
X_2 = M R R	B_2 = -0.014		0.207	-0.066	0.948
	ANNOVA	TABLE			
Source	SS	DF	MS	F	Sig.
Regression	76.348	2	38.174	5.039	0.034[a]
Residual	68.175	9	7.575		
Total	144.523	11			

From the SPSS output reproduced in the table above, using the three coefficients, the regression equation is thus given as:

$$\widehat{BIS} = 4.262 + 0.718\ CRR - 0.014\ MRR$$

Where $\widehat{BIS}$ = Expected bank Interest spread given (CRR, and MRR)

CRR = Cash reserve requirement

MRR = Minimum rediscount rate

4.4.1 TEST OF MODEL SIGNIFICANCE (ANOVA METHOD)

The decision rule as stated above says if the calculated F* ratio is less than the critical F - ratio; the null hypothesis will be accepted otherwise it is rejected.

From table 4.6 above, we find that:

Calculated F* – ratio = 5.039

Critical F– ratio = 4.26

Degrees of freedom = n - k- 1 = 9

Where n= number of observations = 12, k = number of independent variables = 2

Level of significance = 0.05

Comparing calculated and critical f ratios, we find that F* = 5.039 > 4.26 at $F\ 0.95^{(2,\ 9)}$

Thus we reject H_0 and conclude that there is a significant relationship among the variables under investigation

4.4.2 TEST OF MODEL SIGNIFICANCE – THE COEFFICIENT OF DETERMINATION R^2, APPROACH

Another way to determine the model significance is through the coefficient of determination R^2, test. This method is adopted in calculating the F- ratio using the following formula:

$$F - \text{Calculated} = \frac{\{R^2 / (K-1)\}}{\{(1 - R^2) / (N-K)\}}$$

Where;

$R^2 = 0.528$

$K = 3$

$N = 12$

Substituting in the equation above, we have:

$$F - \text{Cal} = \frac{0.528 / (3-1)}{[(1 - 0.528) / (12 - 3)]}$$

$= 0.264 / (0.472 / 9)$

$= 0.264 / 0.0524$

F– Cal = <u>5.034</u>

But F ratio tabulated = 4.26 at $F0.95^{(2, 9)}$

Therefore we reject Ho and conclude that there is a significant relationship among the variables under investigation.

4.4.3 TEST OF THE INFLUENCE OF EXPLANATORY VARIABLES

To find which of the variables contributed to the significance of the equation, we tested the following hypotheses using t ratio analysis:

c. $H_0B_1 = 0$ against $H_AB_1 \neq 0$

d. $H_0B_2 = 0$ against$H_AB_2 \neq 0$

From table 4.6, we find calculated t ratio for both variables to be:

t_1 CRR = 3.174

t_2 MRR = -0.066

From the t- distribution table, at 0.05 level of significance and 9 degrees of freedom tabulated t = 2.26.

Comparing calculated t_1 with tabulated t for $H_0B_1 = 0$ against $H_AB_1 \neq 0$ we find that calculated $t_1 = 3.174 > 2.26$ at t 0.05 $^{(9).}$ Thus we accept H_0 and conclude that the inclusion of Cash reserve requirement is significant.

Again for $H_0B_2 = 0$ against $H_AB_2 \neq 0$ we find that calculated $t_2 = -0.066 < 2.26$ at t0.05$^{(9).}$ Here, we accept H_0 and say that the inclusion of minimum rediscount rate in the relationship is not significant.

4.5 TEST OF HYPOTHESIS FOUR

TEST OF THE INFLUENCE OF CRR AND MRR ON GROWTH RATE OF BANK LOANS AND ADVANCES

Ho: This is no significant relationship between the CBN MRR, CRR and growth rate in insured Banks Loans and Advances.

The test-statistic used is also the multiple regression analysis and the method and application has been explored in chapter three.

The rule here at 0.05 level of significance n-k-l degrees of freedom states that if the computed f* ratio is less than the critical f ratio the null hypothesis will be accepted otherwise it is rejected.

The regression results using SPSS statistical package is presented below.

Table 4.5.1 Hypothesis four Result / Output.

0.506[a]	R
0.256	R^2
36.127	Standard error of estimate
13	Observations
MRR and CRR	predictor variables
Growth rate of bank loans/advances	dependent variables

Table 4.5.1 Hypothesis three Result / Output cont.

Variables	Coefficients		Std Error	t(df = 10)	Significance
Intercept	B_0 = 26.826		51.628		
X_1 = CRR	B_1= 4.984		2.948	1.691	0.122
X_2 = M R R	B_2 = -2.140		2.688	-0.796	0.444
	ANNOVA	TABLE			
Source	SS	DF	MS	F	Sig.
Regression	4494.515	2	2247.257	1.722	0.228[a]
Residual	13051.798	10	1305.180		
Total	17546.312	12			

From the SPSS output reproduced in the table above, using the three coefficients, the regression equation is thus given as:

GRBLA = 26.826 + 4.984 CRR – 2.140 MRR

Where

GRBLA = Expected growth rate of bank loans and advance given(CRR,MRR)

CRR = Cash reserve requirement

MRR = Minimum rediscount rate

4.5.1 TEST OF MODEL SIGNIFICANCE (ANOVA METHOD)

The decision rule as stated above says if the calculated F* ratio is less than the critical F - ratio; the null hypothesis will be accepted otherwise it is rejected.

From table 4.8 above, we find that:

Calculated F* – ratio = 1.722

Critical F– ratio = 4.10

Degrees of freedom = n - k- 1 = 10

Where n= number of observations = 13, k = number of independent variables = 2

Level of significance = 0.05

Comparing calculated and critical f ratios, we find that F* = 1.722 < 4.26 at $F\ 0.95^{(2,\ 10)}$

Thus we accept H_0 and conclude that there is no significant relationship among the variables under investigation.

4.5.2 TEST OF MODEL SIGNIFICANCE – THE COEFFICIENT OF DETERMINATION R^2, APPROACH

Another way to determine the model significance is through the coefficient of determination R^2, test. This method is adopted in calculating the F- ratio using the following formula:

$$F - \text{Calculated} = \frac{\{R^2 / (K-1)\}}{\{(1 - R^2) / (N-K)\}}$$

Where;

$R^2 = 0.256$

$K = 3$

$N = 13$

Substituting in the equation above, we have:

$$F\text{– Cal} = \frac{0.256 / (3 - 1)}{[(1 - 0.256) / (13 - 3)]}$$

$= 0.128 / (0.744 / 10)$

$= 0.128 / 0.0744$

F– Cal = <u>1.720</u>

But F ratio tabulated = 4.10 at $F0.95^{(2, 10)}$

Thus since F-cal =1.720 < 4.10 at $F0.95^{(2,10)}$, we accept H_0 and conclude that there is no significant relationship among the variables under investigation.

4.6 DISCUSSION OF RESULTS/FINDINGS

4.6.1 HYPOTHESIS: 1

Our analysis of data for hypothesis one yielded the following relationship:

BLR = 8.215 + 0.142CRR + 0.937MRR

Where BLR = Bank Lending Rate

CRR = Cash Reserve Ratio

MRR = Minimum rediscount rate

We interpret the above relationship as follows:

With Cash Reserve Ratio held constant, a 10% increase/(decrease) in Minimum Rediscount Rate will lead to a 9.3% increase (decrease) in Bank lending rates. On the other hand, if MRR is held constant, a 10% increase (decrease) in CRR will result to a 14% (increase)/ decrease in BLR.

After conducting the test of significance, the hypothesis, which stated that there is no significant relationship between cash Reserve Ratio, Minimum Rediscount Rate and Banks Lending Rate, was rejected at the 5 percent level of significance. Probing further to discover which of the variables between CRR and MRR contributed to the significance it was discovered that MRR rate was the deciding factor while the study reveals that CRR has no significant relationship with Bank lending Rates.

4.6.2 HYPOTHESIS: 11

There is no significant difference between the legally required Liquidity Ratio and the Actual Liquidity Ratio of Banks in Nigeria.

This hypothesis was rejected at the 5 percent level of significance using a thirteen year (13yrs) period; Targeted and Actual Liquidity ratios were analyzed using the T-test, a statistical tool that tests for the difference between variables. The conditions set was that if calculated t-falls outside the acceptance region using 5 percent level of significant and $n_1 + n_2 - 2$

degrees of freedom and a two tailed test, the hypothesis will be rejected. Thus, with critical t at 2.064 and calculated t* at -7.277 the hypothesis was rejected. The negative sign implied that Actual liquidity was greater them targeted liquidity.

4.6.3 HYPOTHESIS: 111

Our computations yielded the following result.

BIS = 4.262 + 0.718CRR – 0.014MRR

Where:

BIS = Bank Interest Spread

CRR = Cash Reserve Ratio

MRR = Minimum Rediscount Rate.

This relationship is interpreted to mean that:

a). With MRR held constant, a 10% increase/decrease in CRR will lead to a 7.2% increase/decrease in Bank interest spread.

b). With CRR held constant, a 10% increase/decrease will result to a 1.4% decrease/increase in Banks' Interest spread

The test of significance resulted to the rejection of the hypothesis which says that there is no significant relationship between CRR, MRR and Banks' Interest spread at 5 percent level of significance. An analysis of the contribution of the variables to the significance of the test reveal that Minimum Rediscount Rate has no significant relationship with Banks'

Interest spread while Cash Reserve Ratio was found to have a significant relationship with Banks Interest spread.

4.6.4 HYPOTHESIS 4

The analysis of data for hypothesis four led to the acceptance of the null hypothesis which says that: there is no significant relationship between cash reserve requirement, minimum rediscount rate and growth rate of bank loans and advances.

Our computations yielded the following result.

$$GRBLA = 26.826 + 4.984CRR - 2.140MRR$$

Where:

GRBLA = Growth Rate of Bank Loans and Advances

CRR = Cash Reserve Ratio

MRR = Minimum Rediscount Rate.

CHAPTER FIVE

SUMMARY, CONCLUSSIONS AND RECOMM`NDATIONS

5.1 SUMMARY

This study dwelt on the impact of monetary policy on the performance of banks in Nigeria. Before now, most studies in this area had centered on the adherence of banks to stipulated monetary policy targets/ guidelines in the areas of sectoral credit allocation, maintenance of certain liquidity levels, interest rates, reserve requirements, credit expansion etc. In this research work, we deviated from this norm and looked at the impact of monetary policy on banks credit administration, as well as monetary policy effects on bank lending rates, growth in bank loans and advances and liquidity profile. Accepted that banks has to conform to the general macro-economic objectives of Government, it is obvious that banks are in business to make profit or rather as financial experts put it, to maximize the shareholder wealth. In this study, monetary policy is seen as one of the challenges banks have to overcome as they strive to meet the objective of shareholder wealth maximization. Therefore, in looking for the impact of monetary policy on banks performance, we identified the instruments through which monetary policy operates. Then, we matched these against some performance variables of banks and using known statistical tools we sought to establish the relationships between them.

5.2 *CONCLUTIONS*

From the result of our analysis, we therefore make the following conclusions:

1. That minimum rediscount rate as a monetary policy tool affects the performance of banks through its impact on the lending rates of banks.
2. That growth in bank loans and advances are independent of minimum rediscount rate and cash reserve ratio.
3. That banks keep more liquid assets than what is required by the monetary authorities.
4. That there is a significant relationship between cash reserve ratio and bank interest spread.

5.3 ***RECOMMENDATIONS***

Based on the findings of this research, we offer the following recommendations;

1. That minimum rediscount rate be effectively used to bring down the cost of funds while allowing for a reasonable margin for banks to remain profitable.
2. That cash reserve requirement be reexamined if it must be used as a monetary policy instrument to make it effective. It could however be

phased out as in many other countries since it impacts negatively on the cost of funds due to its hidden tax effect on banks.

3. That banks be allowed to manage their liquidity since the statutory requirement has over the years been lower than what banks maintain.

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