TITLE PAGE

THE IMPACT OF MONETARY POLICY MEASURES AS AN INSTRUMENT OF ECONOMIC STABILIZATION IN NIGERIA (1980 - 2010)

BY

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CERTIFICATION PAGE

This is to certify that this research work on "The impact of monetary policy measures as an instrument of economic stabilization in Nigeria" has been read and approved as meeting the requirements of the Department of Economics, Caritas University Amorji Nike Enugu for the award of a Bachelor of Science (B.Sc) Degree in Economics.

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DEDICATION

This research work is dedicated to the Sacred Heart of Jesus and immaculate Heart of Mary. These two hearts gave me the strength and courage all through my academic pursuit; also to my family for their supports.

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May God bless you all abundan

ABSTRACT

The study examined the impact of monetary policy in stabilizing the Nigeria economy. In the model specified inflation is the regress while cash research requirement, liquidity ratio, money supply, minimum rediscount rate, interest rate are the regressors. The government employs a deliberate manipulation of cost and availability of credit and money to achieve this economic objective. The CBN being the sole regulatory body combines measures designed to regulate the value, supply and cost of money into economic activities. This is what we call monetary policy (CBN Brief 1996/03). It is against this background that the research is carried out to ascertain the effect in the use of monetary policies such as money supply, interest rate, liquidity ratio, minimum rediscount rate, inflation rate and cash reserve requirement to stabilize the Nigeria economy. Also to determine the relationship that exists between the independent variables and dependent variable from the secondary data for the period under study (1980 - 2010). The statistical technique that will be used for this analysis is the ordinary least square technique, with the aid of PC five 8.00 software package. It has been identified that the major problem militating against the poor performance of monetary policy instruments in stabilizing the economic in Nigeria is time – lags which involves policy employed to take many months to achieve its full effects. This research recommends that there should be a reduction in the cost of production and increase the exportation in order to achieve the objectives of naira devaluation in Nigeria and also, central banks should be independent and should be able to achieve its inflation targets and the stabilization of growth rate in money supply.

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CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND OF THE STUDY

Monetary policy is the process by which monetary authority of a country controls the supply of the money that is monetary stock often targeting a rate of interest for the purpose of promoting economic growth and stability.

Monetary policy measures are monetary management put in place by the government through the central bank. These measures rely on the control of monetary stocks, that is supply of money in order to influence board macro-economic objectives which includes price stability, high level of em*loyment sustainable economic growth and balance of payment equilibrium. These board objectives are achieved through the use of appropriate instrument depending on which objective the policy formulated want to achieved and also on the level of development on the economy.

In the application of monetary policy measures as instrument of stabilization, instrument of monetary policy are determined by the nature of the problems to be solved and by this environment in which these problems exist. They are broadly two categories of these instruments VIZ- indirect and direct instruments. INDIRECT INSTRUMENT are usually used in the market based on economic where the quality of money stock can affected through the relationship between supply and resume money as well as the ability of the monetary authority to influence the creation of reserved.

The reserved and hence money supply can be affected through the following ways.

1.   Deposit ratio/change in reserve.

2.   Change in discount rate.

3.   Interest rate change.

4.   Engaging in an open market operation.

In an underdeveloped financial institution the instrument of monetary management is largely limited to direct measure which set monetary and credit target at desired levels. The major DIRECT control measure is direct investment

regulation however quantitative ceiling on overall credit operation is also used. These instruments of monetary policy are applied in the achievement of varied objectives.

1.2 STATEMENT OF THE PROBLEMS

The Nigeria economy has encountered the problem of disequilibrium, inability to mobilize domestic savings and unsatisfactory expansion of domestic output. These problems have consistently and presently done severe damage to Nigeria economy; but most strikingly these problems have continued to play the economy unabated that is, the economy is becoming less strong. It is against the background that the problem of this study has been identified and they are as follows.

1.   Are monetary policy measures effective as instrument of economic stabilization?

1.3 STATEMENT OF OBJECTIVES

The objectives of the study are:

i.   To analyze the various monetary policy objectives and instrument for the period.

ii.   To ascertain the level of success of policy measures against desired objects.

iii.   To identify the factors that tends to hinder the full attainment of desired objectives.

iv.   To recommend the appropriate policy measures for the achievement of specific objectives as well as recommend solution to problem that hinders the full attachment of such objectives.

1.4   STATEMENT OF HYPOTHESISs

The following hypothesis is been formulated to guide the study.

H_0:   Monetary policy measures have no impact on the economic stabilization in Nigeria.

H_1:   Monetary policy measures have impact on the economic stabilization in Nigeria

1.5   SIGNIFICANCE OF THE STUDY

These researches provide insight into monetary policy measures as an instrument of economic stabilization and will therefore be of valuable use to the following set of people.

i.   To student, it will provide a compliment to the fair existing text on monetary policy and economic stabilization.

ii.   To bankers, it will also find a valuable tool toward analyzing the effect of government action on their activities whether it is valuable or not.

iii.   To investors, it will serve as a guideline on the effect of monetary policy on various sectors of the economy in which their fund can be invested.

iv.   To the ordinary reader, this work will serves as an open eye and a valuable store of knowledge.

1.6   SCOPE AND LIMITATION OF THE STUDY

This research work covers the monetary policies from (1980 - 2010). This study will cover the relationship between the individual who would wish to know about the country's economic state, and it is hoped that it will go a long way to solve some of the economic problems as regards to monetary policies and its measure as an instrument of economic stabilization.

1.7   DEFINITION OF TERMS

Monetary stock: This is the amount of money in circulation at any point in time.

Reserve money: This refers to the amount of money, banks are required to maintain in their vaults.

Reserve ratio: This is the ratio of deposit that banks are required to maintain with the central banks.

Discount rate: This is the rate at which the central bank make loan to commercial bank as a leader of last resort. This term is used to qualify the central bank, when banks are cash trapped; it is the central bank that lends to them, whenever there is no alternative or liquidation.

CHAPTER TWO

2.0   LITERATURE REVIEW

2.1   THEORITICAL LITERATURE

Monetary policy in Nigeria has been conducted under wide raging economic environment since the establishment of the central bank of Nigeria (CBN) in 1959. It is the central bank or monetary authority that controls the supply of money, availability of money and cost of money or rate of interest. Monetary policy is usually used to attain a set of objectives oriented toward the growth and stability, of the economy. These goals include "promotion of price stability, stimulation of economic growth, creation of employment, reduction of pressures on the external sectors and stabilization of the naira exchange rate" (OGWUMA, (1997:3). Monetary theory provides insight into how to craft optional monetary policy, also money has some relationship with economic activity and it explain why monetary policy has a central role in macro economics management. This economics activity

can be define as an activity that aims at production, processing, packing, selling, distribution, purchase and consumption of goods and services as well as money and wealth with a view to fulfilling some wants/needs on commercial or self reliance basis. It is generally known that this relationship works out through changes in the liquidity of the system. A change in the money supply will alter the liquidity in the hands of the public and this will, in turn influence their income and expenditure. For example, an increase in the money supply will increase the liquidity in the public and their spending on either real asset or financial assets.

According to Lord Keynes, "an inverse in the quantity of money increases aggregate money demand on investment as a result of the full in the rate of interest. The increased investment will raise effective demand through the multiplier effect thereby increasing income, output and employment. Therefore, when there is full employment, increase in income and output, price will change in the same proportion as the quantity of money (JHINGAN, 2003: 277). This theory deals on short run economy which tends towards the area of macro economics but has contributed greatly to monetary economics. More so, the application of monetary policy instrument seeks to ensure that domes credit expansion and the monetary

implications of the balance of payments targets will match the expected increase in the totally demand for liquidity in an economy (central bank of Nigeria).

This chapter is a review of the literature on the nature and function of money which is the central variable to the monetary policy process. This chapter will touch on various issues: what constitute money in a particular environment, what element of the money supply can be easily managed so as to achieve the goal of monetary policy on interest rate and investment and how to measure the changes in the values of money.

The monetarist new quantity of money believes in the supreme efficiency of monetary policies by arguing that money is the most important regarding instrument in an economy and that money has a direct effect on the economy. Hence, if money supply increases, it will eventually decompose itself as increase in the cash balance of various individuals and economy agent in the society. It also deals with how an individual keeps money in relation to prices of investment assets which is a case of portfolio theory. "Therefore the demand for money (or velocity) is not a fixed quantum but varies in a fairly predictable fashion, price expectation wealth and permanent income and taste and preference" (ANYANWU 1993: 122).

2.1.1 THE KEY NESIAN VIEW ON MONETARY POLICY

In the Keynesian analysis, monetary policy plays a crucial role in affecting economic activity. It contends that a change in the supply of money can permanently change such variables as the rate of interest, the aggregate demand and the level of employment, output and income.

Keynes believed in the existence of unemployment equilibrium. This implies that an increase in money supply can bring about permanent increase in the level of output. This rise in supply of money, its first effect is in the rate of interest which tends to full. Given the marginal efficiency of capital, a fall in the rate of interest will increase investment. The increased investment will raise effective demand through the multiplier effect thereby, increasing income, output and employment.

Keynes also analysis what causes the rate of interest to change in his monetary policy. In the Keynesian analysis, the rate of interest is determined by demand for the supply of money. If either the demand for money or supply of money changes, the equilibrium rate of interest would change. The supply of money is determined by the monetary authority which is normally fixed in the short-run in other words, money is the desire to hold cash for transaction,

precautionary and speculation purposes. The speculative and transactionary demand for money depends on the rate of interest or bond prices. "Keynes also alleged that the theory's framework was too rigid for analyzing the effect of changes in the money supply in expenditures and the price level". (ANYANWN 1993: 107).

Keynes himself proceeds to question the efficiency of his monetary policy under certain conditions. He argued that a very low interest rate, the demand for money becomes perfectly elastic. This liquidity trap portion of the demand for money curve which is completely flat. This means that for any further interest in supply of money by the monetary authority cannot reduce the rate interest. This implies that there will be no effect on investment income, the monetary policy does not influence economic activity, given the interest inelastic investment functions, and monetary policy will be effective in the Keynesian view on monetary policy.

This Keynes believed on the basis of his experiences that monetary policy operates under some certain limitations upon which it impact depends on first, if the increases in supply of money reduces the rate of interest provided the demand for money does not become infinite (i.e. perfectly elastic), and second, the

reduction in the rate of interest increases investment demand provided it is not inelastic to the rate of interest becomes effective. According to (Jhingan 1986: 402) "If you are tempted to assert that money is a link which stimulate the system of activity, we must remind ourselves that there may be several steps between cup and the lips". This limitation becomes more serious during depression and this monetary policy become ineffective.

That is why Keynes favored investors on public project during depression. " I am now somewhat skeptical of the success of a merely monetary policy directed toward influencing the rate of interest".(JHINGAN 1986: 401). In fact, the advocate supplementing of monetary policy in fiscal policy depression.
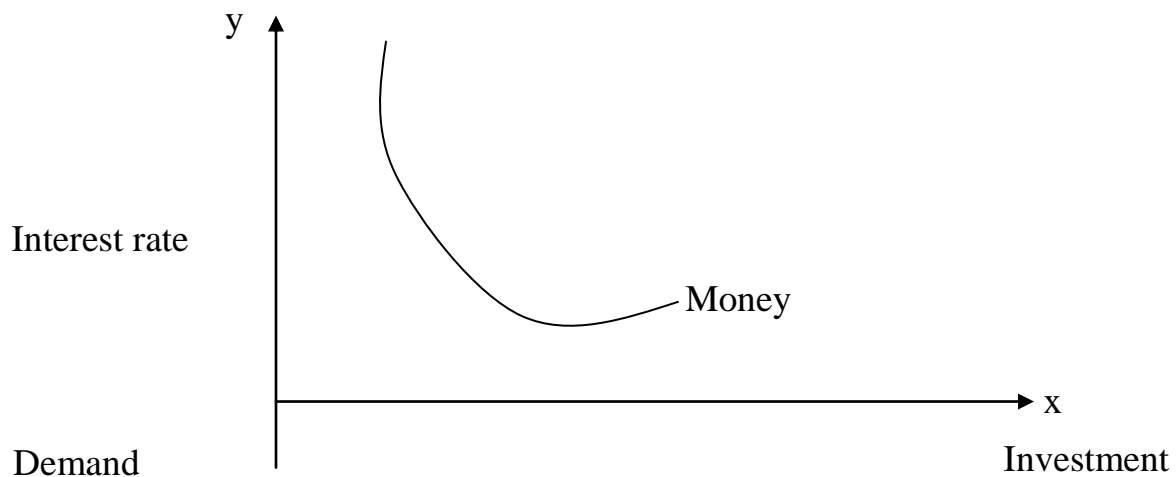
Figure 2.1.2 Demand for money supply.

Change in money stock through the use of monetary policy tools with investment demand through interest rate i.e. (if interest rate increases, investment will decrease and vice versa). "Meaning of demand for money? The demand for money refers to the total amount of money balances that people want to hold for certain purposes". (J.C ANYANWU 1993:100).

For any fall in interest rate for instance, investor would be encouraged to borrow more fund for investment since there is enough saving to cover the desired investment. Higher investment demand will stimulate aggregate demand and national product through the multiplier process.

In Keynesian framework, an open economy is given by $Y = C + I + G + X_n$.

Where Y   =   Aggregate demand.

C   =   Consumption expenditure.

I   =   Investment expenditure.

G   =   Government expenditure.

X_n =   Net export (X-M).

X   =   Export.

In this framework of Keynesian in an open economy leads to an open market purchase of securities, for instance, the CBN which is an expansionary monetary policy increases banking sector liquidity and attempt to dispense with it, pushed the interest rate downward and this in turn will encourage investment and aggregate demand will increase, then gross national product (GNP) will increase which leads to economic growth. "Since resources can be less than fully employed for sustained period, the level of real output can be influenced by aggregate demand" (ANYAWU 1993: 109).

2.1.2 THE CLASSICAL VIEW ON MONETARY POLICY.

According to classical view on monetary policy, money is a veil. It is neutral in its effect in the economy growth. It simple affects the price level. An increase in the supply of money, leads to an increase in the price level, but the real level income, the rate of interest and the level of real economic activity remains unaffected. In terms of quantity theory of money, the main function of money in classical system is that money is to act as a medium of exchange. It also helps to

determine the general price level at which goods and services will be exchange. The relationship between money and price level can be explained algebraically as.

$$MV = PT.$$

Where M – exogenous variable (the supply of money).

V – Velocity of circulation.

P – Level of prices

T – The volume of transactions

The equation above, tells us that the quantity of money M, is determined independently of any other variable (M is an exogenous variable), velocity of circulation V is taken as constant, the volume of transaction, T is also considered constant. Thus, with the level of prices P and the assumption of full employment of the economy remains stable i.e. "The proposition established is that the level of prices is functions of the money supply i.e. supply of money". (ANYANWN 1993:102).

Also in the static classical model, regardless of the investment schedule, there always exists a generated (PATINKIN, 1969: 262) – (ANYANWU 1993:

104). That is, there is always a price decline whose effect is stimulatory. Automatically attaining full employment level of purchasing through such a decline in commodity prices requires that money wages is maintained but the real balance effect will ensure that the subsequent decline in commodity prices would be less than any fall in the level of money wages.

In this theory, the classical believes in long – run economy, where full employment level is attained. They recognized the existence of unemployment in the eve it of downward rigidity of money wages. Such a situation could be corrected by an expansionary monetary policy suppose the monetary authority increase the money supply given the velocity of money and the level of real output, with the increase in the money supply, liquidity rises with the people who increase the demand for goods and services, this in turn raises the prices level reduces the real wages which provides incentives for employers to expands employment and output towards the full employment level.

2.1.3 THE MONETARIST VIEW OF MONETARY POLICY

Monetarist believes that fluctuations in the money supply are responsible for most large fluctuation in the economy. They argues that show and steady growth in the money supply would yield stable output, employment and prices.

The "monetary revolution" FRIEDMAN and D. MEISE HMAN (1963) refers to the new and importance contribution that the monetary theory and policy by profession Melton Friedman and his colleagues at the university of Chicago, it was assert of revolution against the views of Keynesians who held the view that "money does not matter".

The Keynesian regarded to the money supply as passive factors in the economic system whose economic effects were highly unpredictable. On the other hand in the monetary revolution "only money matters from three reasons.

- The quantity of money is capable of being controllable fairly accurately by deliberate policy.

- Changes in the quantity of money can produce substantial changes in the flow of income, prices and others.

- That the relationship between the stock of money and other asserts are relatively stable and dependable.

The monetarist revolution possesses the following characteristics. Money supply being crucial determinant of economic activity in the short -run. It is the money that determines total spending and therefore output, employment and price lead. Thus, there is a direct link between the money supply and the natural income. If the content velocity of money which is expressed as Y/M. as a result of the stability of monetary velocity change total spending and national income by predictable amount. The demand for money is a transaction demand for money and it is determined by the level of income. If the central banks (CBN) increase the money supply by purchasing securities, people will find their holdings of money have increased. They will therefore, spend their excess holding of money party in assets and partly on consumer goods and services. This spending will reduce their money balance and at the same time raise the national income. On the contrary, a reduction in this supply of money by selling securities on the part of the central bank will reduce money holdings of the buyers of securities. Therefore, increase their money holding partly by selling their assets and partly by reducing their consumption expenditure on goods and services. This will reduce the national income but the demand for money remains the same. According to FRIEDMAN, a change in the money supply causes a proportionate change in the prices level of

income. Given the demand for money, if the economy is operating at less than full employment level, an increase in the money supply will raise output and employment with a rise in total expenditure in the short-run. An increase in money supply causes national income to rise because with excess money supply, people start spending more until the demand for money and supply of money is equal.

Thus, an increase in the money supply in the short-run raises output, employment and income. Not a rise in the money supply in the long-run, with a further increase in the demand, prices and wages will increase in the expectation of inflation due to in appropriate increase in money supply. This is why the monetarist regards the point of revolutionary as against the Keynesians view in monetary policy because the rate of interest plays no part in influencing either the demand for money or supply of money. Moreover, changes in money supply influence economic activities. It could be directly or indirectly through changes in the rate of interest like Keynesians.

- The transmission mechanism of monetary policy influences on economics activity involves reshuffling of both financial and real assets in the portfolio

of economic units. Keynes (1940-1988) considers only two types of assets, bonds and speculative cash balances in his transmission.

According to the monetarist, when the central bank increases the money supply by purchasing securities in the open market, their prices rise but yield fall due to fall in market rate interest. People will therefore sell securities and their holding of money will rise, this will raise the demand for financial and real assets. In the monetarist system, central bank cannot influence interest rate through changes money supply. If it tries to reduce the interest rate by releasing large amount of money, this will only cause inflation since the economy is already at near or full employment level. In fact, this will reduce the real money supply and increase the interest rate.

- In the long run, the level of real national income is determined by the forces of demand and supply. This is based on the on the consumption that prices and wages in all markets are inherently flexible. This view is in marked contrast to the Keynesian view that there is always under employment equilibrium in the economy and unemployment is involuntary.

- The monetarist hold that the economy is stable subjected to wide or sudden in fluctuations due to changes in the economy account of monetary and fiscal policies adopted by the government.

These policies destabilize the economy. Friedman does not favor even contracydical monetary policy might actually have a destabilizing effect on the economy. However to stabilize the economy and avoid inflation, the rate of output and the nation grows without inflation.

- Expectation plays an important role in the monetarist view. The -monetarist hold that expectation are rationed. "Decisions taken in the basis of expectations will cause the anticipated future result to occur ever more quickly if not at once. Thus intelligent expectations are self reinforcing and stabilizing so long as the government does not create false signals by erratic and irrational interventions".

They have revolutionized economic thinking through the rational expectations of hypothesis. For examples, the rational trade–off even in the monetarist as revolutionary.

2.2 MEANING, INSTRUMENTS AND OBJECTIVES OF MONETARY POLICY.

Monetary policy is a major economy stabilization weapon which involves measures, designed to regulate and control the volume, cost, availability and direction of money and credit in an economy to achieve some specified macro economy policy objectives. That is, it is a deliberate effort by the money authorities (or central bank) to control the money supply and credit conditions for the purpose of achieving certain broad economy objectives. Basically, monetary policy is defined as a set of goal to attain certain objectives oriented towards the growth and stability of the economy. These goals may include stable prices and low unemployment.

Monetary policy according to Nwankwo (1999:4) can be defined as measure or combination of measures designed to influence or regulates the volume, price and direction of money and credit. He contended that money comprises of six different policies dealing with the volume of money and credit, its price or the rate of interest and its allocation.

In Nigeria, monetary policy is designed to attain price stability, balance of payment equilibrium and high rate of economy growth. The central bank of Nigeria (CBN) ensures that nation attain price stability, balance of payment equilibrium, and high rate of economy growth by manipulating interest rate and total credit. Salvin (1999 :273) define monetary policy as the use of open market operations changes in discount rate, changes reserve requirement and other measures available to the monetary authorities to control the rate of growth of money supply. He further notes that the goals of monetary policy are price stability, relative full employment and satisfactory rate of economy growth.

John.A.Ranlett in his book titled "money and banking. An introduction to analysis and policy". Define monetary policy as the deliberate management of money supply for the explicity purpose of attaining specific objective or set of objectives, in the sense that monetary policy involves the conscious planned manipulation of volume of money in circulation to achieve specific objective of employment, growth and price stability. The monetarist whose leader is Milton Freidman argue that money supply should be controlled and not interest rate because they felt, the level of or direction of movement of interest rate is not an appropriate guild for policy. In their view a high or raising interest rate may well

be a reflection of expansionary rather than concretionary policy. Olumechere (1988:27) sees monetary policy measures as a deliberate actions adopted by the government to regulate and control the supply of money so as to promote the achievement of national objectives. According to umole (1985:19) monetary policy is the control of supply of money as an instrument in achieving the objective of a general economic policy. He goes further to state that, it is a policy which deals with the discretionary control of money supply by monetary authorities in order to achieve sated or desired economic goals. Ezeugo (1987:15) shares the view with Olumechere and Umole (1985:19). He pointed out that monetary policy involves measures which the government adopted using specific instruments to stimulate, structure or restructure of the economy so as to attain the desired objective which may include increase output in the industry, agriculture or other sector of the economy. Employment generation, control of inflation, adjust the balance of payments and mobilization of savings.

Anyanwu Okoro. M. (1997:71) monetary policy is a government policy about money. It is a deliberate manipulation of cost, availability of money and credit by one government as a means of achieving the desired level of prices, employment, output and other economy objectives. The government of each

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country embarks upon policies that increase or decrease the supply of money because of knowledge that money and the cost of money affect every aspect of the economy by affecting aggregate demand, money supply affect the level of consumption and the rate of economic growth, an increase or decrease in the cost money, interest rate affects all the variables too.

2.2.1 INSTRUMENTS OF MONETARY POLICY.

The monetary policy instrument can be broadly be classified into two (2). The quantitative and qualitative instruments. The quantitative instruments are impartial tools which operate primarily by influencing the cost, volume and the availability of bank reserves. This leads to regulation of the supply of credit but cannot be used effectively to regulate the use of credit in particular areas or sector of the credit market like the open market operations (OMO), discount rate policy, required reserve ratio or reserve requirement ratio and special deposits. The quantitative instruments, these confers on the monetary authorities the power to regulate the terms on which credit is granted in specific sector like moral suasion, selective credit controls or guidelines and direct regulation of interest rate.

2.2.2. OPEN MARKET OPERATION (OMO)

The major instrument of indirect monetary control in Nigeria is the OMO (open market operation). The open market operation was introduced at the end of June 1993 and is conducted wholly in Nigeria treasuring bill (NTBs) including repurchase agreements. These operations involve the sale or purchase of government securities in the open market depending on whether the economy is inflationary or deflationary respectively. The effect is that when the monetary authorities sell securities to the market banks' reserves declines and when they buy, banks' reserves increases. In the way open market operations reduce or enhance the banking system ability to crate credit and hence money supply. It can be an important weapon of monetary control in an economy with well developed money and capital markets.

2.2.3 RESERVE REQUIREMENT (RESERVE RATIO)

The reserve requirement other known as the reserve ration can be manipulated by monetary authorities to reduce the ability of commercial bank to make loans to the public by simply increasing the rate and enhancing their lending position by reducing the rate. In this connection reserve requirement is both an instrument for liquidity management and prudential regulation. The reserve

requirements are cash reserve ratio and the liquidity ratio while the former is computed as a potion of the total deposit liabilities. The cash reserve requirement is a very potent instrument and has been progressively increased from 6 % in 1993 to 7.8% in 1997 and then to 10.8% in 2001 and then fall to 6.6 in 2010.

Reserve requirement is one of the most powerful instrument of monetary control, if it changes, they require reserve ratio have another effect. A change in the required ratio changes the ratio by which the banking system will expand deposit through the multiplier effect. If the required reserve ratio increases, it thereby reduces the liquidity position of the banking system.

Cash reserve requirement was first used to reduce excess cash holding by commercial banks. The commercial banks were required to maintain a minimum cash deposit with the central bank ranging from 5% to 12% of their total demand deposit on which they are paid interest rate below 2.5%.

2.2.4 DISCOUNT RATE

The discount rate is the rate of interest the monetary authorities or the central bank charges the commercial banks on loan extended to them. If the central banks wishes to increase liquidity and investment , it reduces the discount rate

charged by commercial banks thus resulting in attractive borrowing or low cost of borrowing and hence expansion in liquidity and investment and vice versa.

2.2.5 SELECTIVE CREDIT CONTROLS

Selective credit controls or guidelines involve administrative orders whereby the central bank, using guidelines, instruct banks on the cost and volume of credit to specified sectors depending on the degree of priority of each sector. Thus selecting credit controls are the examples of the use of monetary policy to influence directly to the allocation of resources, indicating a lack of faith in the working of the free markets. The aim of the selective credit control is to channelize the flow of bank speculative and other purposes to socially desirable and economically useful.

2.2.6 MORAL SUASION

This involves the employment of persuasions or friendly persuasive statements, public pronouncement or outright appeal in the put of monetary authorities to the banks requesting them to operate in a particular direction for the

realization of specified government objectives. For examples, the central bank or the government may appeal to the banks to exercise restraint in credit expansion by explaining to them how excess expansion of credit might involve serious consequences for the banking system and the economy as a whole.

2.3.0 OBJECTIVES OF MONETARY POLICY

The objectives of monetary policy refer to the ultimate macroeconomic goals which can change from time to time, depending on the economic for times of a particular country. In Nigeria, the federal government has regulated the volume flow of price and direction of money towards the attainment of a number of objectives such objectives includes.

1. Acceleration of the rate of domestic production, this restrains the rate of inflation.

2. Pursuance of full employment and improvement in the standard of living of the people.

3. To provide optimum level of bank credit to channel such credit into a more productive and small scale enterprises sector of the economy.

4.   Expansion and diversification of the export base in order to restore a healthy balance of payment position.

5.   A realistic and steady economic growth.

6.   Exchange rate stability.

7.   Balance of payment equilibrium.

2.4.0 MONETARY POLICY INDICATORS

According to pruner and Meltzer (1969), the indicator of monetary policy provides a scale that permits policy makers to compare trust of monetary policy on economy activity that is to characterize policy as more or less expensive as before. Thus, the role of an indicator is to allow comparism and assessment of monetary policy.

Anyanwu (1993:145), monetary policy indicator refers to the index of the effect of current policy, that is, some variables or combination of variables to measures the policy effect on the target variables. He further noted that the choice of monetary policy indicator requires some hypothesis concerning the structure of the economy.

The indicators are:

a.   Easily observable with little or no time lag.

b.   Quickly affected by the policy undertaken.

c.   Related to the target and to the goal variable.

2.5.0 MONETARY POLICY TARGETS AND IMPLICATION TO THE NIGERIAN ECONOMY.

According to Anyanwu (1993:146) monetary policy target is a desired value of a variable chosen by the monetary policy market and which is observed with little or no time lag. The question of monetary policy target is the result of the realization that the ultimate objectives of monetary policy are directly and immediately affected by monetary policy action. This monetary policy target is a proxy (target) variable to move in given direction or to be taken on a given value, the ultimate goal variable will respond appropriately. He also noted that there are certain characteristics the monetary policy target must possess to function properly. These are:

1.   It must be readily observe and measurable with or no time lag.

2. The monetary authorities should be capable affecting the target variable directly and in the right magnitude.

3. The monetary authorities should be able to neutralize the effects of any change in the target variable that is related to the policy.

4. It must be related to the ultimate goal variable unambiguously.

Therefore, the implication is that monetary authorities should be capable of affecting it directly and in right magnitude and be able to neutralize the effect of any change in the target variable that is not related to the policy. Otherwise it will expose its integrity, the impediment inherent in this control.

2.6.0 FACTORS THAT MILITATED AGAINST THE IMPACT OF MONETARY POLICY IN NIGERIA

The impact of monetary in Nigeria have been constrained or militated by various internal or external factors. These factors include:

2.6.1 INSTABILITY OF FINANCIAL SECTOR

This is as a result of political instability in macro economy which has attributed the bank distress and lack of managerial efficient result to financial

institutional failures. Subsequently, violence in government, dictatorship and low level of participatory democracy sustain the ineffectiveness of the financial system especially with regards to its ability to perform its international roles.

2.6.2 POOR STATE OF ECONOMIC INFRASTRUCTURE

This results from past neglect especially in rural areas where there is absence of financial institutions which should mobilize financial resources for the success of financial markets.

2.6.3 NON-HARMONIZATION   OF   MONETARY   AND   FISCAL POLICIES

Monetary expansion is used to overcome a recession or a depression or a deflationary gap. It is used to attain favourable balance of payment, pressure on the exchange rate etc. Both measures are used to decrease the cost and availability of credit in the money market and improve the economy.

2.6.4 INCREASE IN GOVERNMENT EXPENDITURE

A deficit in the balance of payment implies an excess of expenditure over income. Between 1990 and 1993, the level of federal deficits increased tremendously and resulted in a high level of growth in monetary aggregates. This put excessive pressures on money supply. The monetary authorities were constrained in controlling generally domestic price level through the use of monetary policy instruments.

2.6.5 EQUATE DATA BANK

Due to inefficiencies and various institutions malfunctioning, the data bank on these aggregates was inadequate and most times outdated. This policy formulation and implementation were very difficult to attain.

2.7.0 THE IMPACT OF MONETARY POLICY DURING THE DEPRESSION ERA OF STRUCTURAL ADJUSTMENT PROGRAMME (SAP)

Before the adoption of Structural Adjustment Programmed (SAP) in July 1986, the economy was deteriorating due to the collapse of world oil market. Thus, SAP was designed to achieve internal and external balances by altering and restructuring the production and distortions, reducing the heavy dependency on

crude oil exports and consumer goods imports, enhancing the non-oil export base and achieving sustainable growth (Sanusi: 2002).

In accordance with SAP, monetary policy was aimed at introducing market-oriented financial system for effective mobilization of financial savings and efficient resources allocation. The main instrument of the market based is the open market operation (OMO). The introduction into the economy that had been under direct control for long needed substantial improvement in the macroeconomic, legal and infrastructural environment for effective operation.

The following measures were taken to ensure improvement in macroeconomic stability during this period:

❖ Reduction in the minimum ceiling on credit growth allowed for banks.

❖ Abolition of the use of foreign guarantees (currency deposits as collateral for naira loan).

❖ Withdrawal of public sector deposits from banks to the central bank of Nigeria (CBN).

❖ The use of stabilization securities for the purpose of reducing the size of excess liquidity in banks was re-introduced.

❖ Commercial banks cash reserve was increased.

2.8.0 DEBT MANAGEMENT AS AN INTEGRATED PART OF MONETARY POLICY

Debt management is defined as the determination of the composition of the composition of the private or public debt. Another way of defining debt management is all measures which affect the size and distribution of national debt.

Under this definition, debt management would include fiscal policy which affects the size of the debt as well as monetary policy which affects the distribution of the national debt (open market operations). The fiscal authorities issues the types of securities that determines the structure of public debt while monetary authorities by their sale and purchase of the public debt held by the private sector point of both monetary and fiscal policy.

Debt management could be used as an instrument of monetary policy to produce economic stability by requiring that refunding security issues be geared to influence the money market in the desired direction. In the manner, debt management could contribute to price monetary stability through the maintenance

of a debt structure that the monetary structure of debt and changes in that structure can have importance being pursued.

This is because borrowing could be from the non bank public, the commercial bank, or the central bank and this has varying effects and implication on the economy.

For instance, if debt structure consists entirely of short term issues restrictive monetary policies may not take effect quickly and strongly because financial institutions and turns may be able to raise funds for lending or spending by selling (with little or no loss) their holding of short term government securities.

A public debt issue is appropriate when a stabilization policy is being pursued. For instance when inflation threatens and it is considered a desirable social policy of stem debt issue provides one means of moderating inflationary pressures since it involves an exchange of debt.

Instruments for money thereby reduce the amount of money in circulation as purchasers withdraw their savings to pay for the securities they buy.

Debt issue in an inflationary period has primary job of reducing liquidity in the private sector, provided however that it provides the sale are not used by the government to finance purchase of real goods and services. The process could be effectively centralized by retiring some part of the national debt by the central bank.

2.9.0. THE IMPART OF MONETARY POLICY ON THE ECONOMY

The sluggish recoveries from the past recessions suggest that monetary policy might have limited impact on economy activity. Ogwuma (1994:44) accepts the idea that the most relevant criterion for assessing the impact on monetary policy on the Nigerian economy is the achievement of the ultimate targets of economic policy. He concludes that the ultimate goals of macroeconomic stability and sustainable growth as so far remained elusive. Turning to the impart of monetary policy on the intermediate target variables, he notes that the relevant monetary aggregates have grown above the targets set for them, the market interest rates remained high and that the naira exchange rate had depreciated almost persistently since the mid 1980 to date.

2.10.0. ECONOMIC STABILIZATION

Economic stabilization means the maintenance of a relatively stable and favorably level of economic indicators.

This is achieved through a combination of monetary and other policy actions of the government.

Therefore monetary policy measures involve deliberate changes in government policy instrument in response to changes in macroeconomic condition in order to stabilize the economic.

Macroeconomic stability is reflected by a low level of inflation and sustainable growth rate and current balance. In the short run, macro –economic stability is the emphasis of monetary policy.

However, it is also called open to ensure wider range of other objectives which includes the restoration of external balance maintenance.

Debates about the theory of stabilization policy operation at two levels.

At one level, there are discussions about the kind of policy, which a government possesses on economy issues such as objectiveness and instruments which it should use for example Keynesian versus monetarist policy. At another

level, there are discussions about the technical details of a governments chosen kind of policy for about whether instrument should be assigned to targets and about how policy can be prevented from actually amplifying.

2.11.0. EMPIRICAL LITERATURE REVIEW

Odozi (1993) says that the main hold of any country's monetary stability lies on the economic programme of a country, typically defines the main objectives in terms of the economic output or outcome for real growth in gross domestic product (GDP), inflation and balance of payment.

This irrespective of whether direct or indirect approach is been used to control money and credit. To achieve the macroeconomic targets, the monetary authorities implement a set of fiscal, monetary and other economic structural policies. The central bank's roles are to conduct appropriate monetary policy, which is consistent with the above objectives. In this regard, the central bank determines the amount of money supply that is consistent with the country's macroeconomic objectives and manipulated the monetary instruments in its disposal in order to achieve that amount.

Masha (2000) reviews monetary policy in Nigeria as follows, in the 1970's through 1986, monetary policy relied mostly on interest rate controls, cash reserve requirement, exchange rate controls and call for special deposit. During this period the financial market was largely underdeveloped. In the 1980's and 1990's, there was changes in the monetary policy as the oil boom stopped but instrument and focus on monetary policy remained largely unchanged. Recent development of monetary reforms was to privatize government enterprises, implementing some social reforms, encouraging small scale business etc.

Oresotu and Mardi (1992) identified three important reasons for understanding the role of money demand functions.

Primarily, the analysis of the demand for money helps policy makers to forecast the money demand and determine proper identification of the demand for money function plays an important role in the transmission mechanism for both monetary and fiscal policies within the economy. In addition, the temporal stability of the identified money demand function is fundamental for monetary policy to have a central bank. In a typical developing country such as Nigeria, the ability to control the monetary base is grossly limited as government deficits have been

largely financed by central bank credit while Uchendu (1995) found that there is a relationship between money supply and money base such relationship was not stable like money multiplier especially of the broad money.

Cukierman (1992) surveyed the evident to find out how the degree of central bank tends to improve macroeconomic performance.

Higher level of independence is associated with higher returns to financial capital. It is the reason the central bank independence could partly commit political authorities to pay relative more attention to domestic price stability.

Lipsey (1989) in analyzing how to carry out monetary policy noted that banks are responsible for carrying out the government's monetary policy and one aspect of monetary policy is the manipulation of the central banks work.

He noted that the banks changes money supply by changing the composition of its own assets and liabilities through the monetary policy instrument.

Ministry (1963) while commenting on the Friedman and Schwartz's study observes the possibility of a slip in the transmission mechanism that was also start in Keynes general theory of unemployment, interest and money to the implied long

transmission channels-open market operation(OMO) and commercial loan in which an increase in money supply affect real valuables. The open market operation (OMO) channels work through changes in bank's port folios in favor of income earning assets.

He envisages a situation where private sector demand is stimulated by changes in relative prices of assets. This leads to increase in consumption demand or rise in the price of second hand financial assets, thereby encouraging investment demand.

Tobin (1978) expands the interest rate concept include those of equity and section. Tobin's first transmission mechanism involves part folios adjustment similar to that of the monetarist but which influence the cost of capital. He argues that an increase in money supply leads to asset substitution between corporate bonds, equities, bank deposits, short term treasures or commercial paper. The substitution affects the rate on short- term instruments and those on other assets. He expresses the possibility of external shocks and non-monetary policy issues such as low retained earnings and increased uncertainties affecting the cost of capital and transmission process.

Laidle (1978) conducted extensive review of how money affect money income on what he terms the transmission of mechanism starting from a review of traditional IS-LM model for transmission of monetary policy; he sketches the nominal port-folio adjustment mechanism in which money affect expenditure through its property as an asset in the port-folio of the consumers. He sites study by Friedman and Meiseluman (1963), Anderson and Sordan (1968) as empirical evidence in support of the money income causation.

The three main shortcoming of Is- Lm model according to him are:

- The inability of the model to deal with the breakdown of the effects of changes in money into changes in income and prices.

- The absence of the linkage between the government budget and the behavior of money supply.

- The exclusion of the external sector. Elaborating on these ladler describes a price and output transmission mechanism between money, financial assets, while monetarist content that substitution exist between money, financial assets that are close to be substituted for money.

In such a situation, the effect of monetary policy instead of being transmitted through the financial market is being (rather quickly) to the market for assets thereby producing an immediate impact on the level of economic activities.

Central bank of Nigeria (CBN) review monetary policy as a combination of measures designed to regulate the value, supply and cost of money in an economic activity. An excess demand for goods and services will cause rising or balancing of payment problems. On the other hand, an appropriate way to assume sustainable economic growth and maintain internal and external stability.

CHAPTER THREE

3.0   METHODOLOGY

Methodology is a set of rules and procedures upon which research is based and against which claims for knowledge and assumptions are evaluated for decision making.

It can also be said to be the specification for collection and analyzing the data necessary to help solve the problem the country obtaining various levels of information associated with each level of accuracy is minimized.

It also covers area such as research design, population of study, sample size, and sampling techniques, instruments of data collection and procedure for data collection.

It is also a medium used in the collection of data in order to ensure valid conclusions made at the end.

It is dedicate to highlight the method the research employed in the analysis of data. Also it invariably serves as a prelude to chapter four where the data is presented as well as analysis.

This chapter also aims at investigating the method that will be used to determine the relationship existing between monetary policy tools and inflation rate, which on the other hands used to denote inflationary trend in Nigeria.

Also it involves a chain of procedure through which the researcher arrives at his or her main objectives.

3.1   THEORITICAL FRAMEWORK

An economic research is concern with the measurement of parameters of economic relationship and the production of value of economic variables by means of these parameters (Kontsoyiannis 1997).

The economic methodology adopted for this research work is the ordinary least square method (OLS). This is backed by apriority economic theory and relevant time series data, which span a period of 30 years between (1980-2010).

The choice of this economic method is necessary, since in this work, we want to measure the effectiveness of monetary policy as tools in controlling

inflation, ascertain the economic relationship between them in order to make some prediction about the monetary tools.

Monetary tools used in Nigeria is the indirect monetary tools which includes open market operation (OMO),cash reserve requirement(CRR), liquidity ratio(LR),minimum rediscount ratio(MRR),priority changes and selective credit policies.

In Nigeria commonly used target variable are interest rate, money supply (M^1, M^2), domestic credit and high powered money or money base /reserve money.

3.2   ESTIMATION PROCEDURE

The method to be used for this work is the ordinary least square (OLS) method.

This is because the ordinary least square has the best, linear, unbiased, estimate (BLUE). Another reason for the use of ordinary least square (OLS) is that the computational procedure is fairly simple compare with the other economic techniques and the data required are not excessive.

Again the mechanics of the ordinary least square are simple to understand. It is also an essential component of most other economic techniques.

The ordinary least square method (OLS) will be used to so as to use figures from several independent variables of monetary tools to regress against inflation rate. The software package to be used is PC Give 8.00.

3.3   MODEL SPECIFICATION

The specification of economic model is based on economic theory and on any valuable information relating to the phenomenon being studied.

In doing this, there are three steps involved:

- Determination of dependent and independent variables.

- Theoretical a priori expectation about the size and signs of parameters of the functions.

- The determination of the mathematical form of the model (Koutsoyannis, 1997: 11).

The model to be adopted will specifically be based on the following functional relationship:

INF rate= F (MRR, INT, LR, CRR, M_2)　　- - - - - - 3.0

Equation 3.0 reads that inflation rate is a function of minimum rediscount rate, interest rate, liquidity ratio and cash reserve requirement.

However, to hold firm the influence of the random variable, the equation is explicitly transformed into the following:

INF= $(\beta_0 + \beta_1 MRR + \beta_2 INT + \beta_3 LR + \beta_4 CRR + \beta_5 M_2 + \mu i)$

Where:

$$INF \quad = \quad \text{inflation rate}$$

$$MRR = \quad \text{minimum rediscount rate}$$

$$INT \quad = \quad \text{interest rate}$$

$$LR \quad = \quad \text{liquidity rate}$$

$$CRR = \quad \text{cash reserve requirement}$$

$$M_2 \quad = \quad \text{money supply}$$

The parameter estimates are β_1, β_2, β_3, β_4, β_5 while β_0 is the parameter constant.

μ= error term

3.4   METHOD OF EVALUATION

The economic a priori expectation will evaluate the parameters to find out if they meet the standard economic theory expectation both in signs and sizes.

Variable	Expected signs
Inflation rate	
Minimum rediscount rate	positive (+)
Interest rate	Negative (-)
Liquidity ratio	Positive (+)
Cash reserve requirement	Negative (-)
Money supply	Positive (+)

The method adopted for evaluation of the model is the multiple linear regression method of ordinary least square (OLS). The techniques to be used in the analysis are:

i.   Signs and magnitude of parameters: this is suggestion about the sign of the parameters and possibility of their sizes mentioned above.

The parameter β_1 mentioned above is expected to have a positive sign. The parameter β_2 related to interest rate, is expected to appear with a negative sign since interest rate and inflation are negatively related. The parameter β_3 of the variable liquidity ratio is expected to have a positive sign with inflation rate.

The cash reserve requirement related to the parameter β_4 is expected to have a negative sign as mention above.

The parameter β_5 of the variable money supply is expected to have a positive sign as shown in the table above.

ii. Coefficient of multiple determinations (R^2) and adjusted (R^2) will be used to test for the goodness of fit. The value of R^2 lies between 0 and 1. The closer the R^2 is to 1, the better the goodness of fit whereas the closer the R^2 is to 0, the worse the goodness of fit.

iii. t – test: this is used to find out the statistical significance of the individual regression coefficients. In this case, we use a two- tailed test to conduct it at a 5% level of significance. When this is done the computed t-ratio (t-cal) is compared with the theoretical t (t-tab) with n-k degree of freedom.

iv.   F- test: this is a tool of the overall significance of the entire regression plane. It will be used to find out whether the joint impact of the explanatory variables actually have a significant influence on the dependent variable.

v.   Durbin- Watson (test-to-test) the validity of the assumptions of non-auto-correlated disturbances Watson will be computed.

3.5   DATA REQUIRED AND SOURCES

In order to ensure an adequate and comprehensive research, secondary data of minimum rediscount ratio, interest rate, liquidity ratio, and reserve requirement and inflation rate were collected from 1980 to 2010.

Data to be used in this study are sourced from the central bank of Nigeria (CBN) statistical bulletin.

3.6   DECISION RULE

- If computed t is higher than critical t value that is, if t> 0.025, reject the null hypothesis if other accept.

- If computed f is higher than critical value of f that is f>f0.025, reject the null hypothesis if otherwise accept.

- If $(\beta_1/2) > S(\beta_1)$, reject the null hypothesis, if otherwise accept.

Note:

When you reject the null hypothesis, it means that the estimate in question is statistically significance. And when the null hypothesis is accepted, it means that the estimate is statistically not significance.

❖ H_0: P = 0 versus H_1: P > 0.

Reject the null hypothesis H_1 at β level if d < du. that is there is statistically significant positive autocorrelation.

❖ H_0: P = 0 versus H_1: P < 0.

Reject the null hypothesis Ho at β level, if estimated (4-d*) < du, that is , there is statistically significant evidence of negative autocorrelation.

❖ H_0: P = 0 versus H_1: P = 0.

 Reject the null hypothesis H_0 at 2β level, if d* or (4-d*), that is, there is statistically significant evidence of autocorrelation, positive or negative.

CHAPTER FOUR

4.0 PRESENTATION OF ANALYSIS OF RESULT

4.1 PRESENTATION OF REGRESSION RESULT

The estimates from the regression carried out are presented and evaluated in this chapter, the ordinary least square(OLS) and the results of our model was estimated using a computer software package Pc Give 8.00.

The empirical results are presented in a table. The table shows the estimated parameters, their t- statistics and the other diagnostic tests of equation. The results obtained from the estimation are presented in the table below.

Modeling inflation by OLS

Variables	Coefficient	Std. Error	t-value	t-prob.	Part R^2
Constant	33.847	20.394	1.660	0.1095	0.0992
MRR	0.78432	1.2246	0.640	0.5277	0.0161
INT	0.36675	0.93926	0.390	0.6995	0.0061
LR	-o.53147	0.32361	-1.642	0.1130	0.0974
CRR	-0.28125	0.94088	-0.299	0.7675	0.0036
M_2	-0.3012	1.1829	-1.945	0.0631	0.1315

$R^2 = 0.264235$, F (5, 25) = 1.7957(0.1503)

DW = 1.10

RSS = 7049.451581

4.2   RESULT INTERPRETATION

42.1 EVALUATION BASED ON ECONOMIC CRITERIA

The parameter estimates are expected to conform to a priori expectation. The table below summarizes outcome of our model parameters on a priori grounds.

Table 4.2.1a

Variables	Expected signs	Obtained signs	Conclusion
MRR	Positive	Positive	Conform
INT	Negative	Positive	Do not conform
LR	Positive	Negative	Do not conform
CRR	Negative	Negative	Conform
M2	Positive	Negative	Do not conform

The a priori expectations for interest rate, liquidity ratio and money supply were not satisfied while those of minimum rediscount rate and cash reserve ratio conformed to the a priori expectations.

4.2.2 STATISTICAL TEST (FIRST ORDER TEST)

i.   Standard Error Test

The null hypothesis for the test is H_0: $\beta_1 = 0$ against the alternative H_1: $\beta_1 \neq 0$.

If the standard error is less than half of the numerical value of the parameter estimate (that is if s ($\beta_1 < {}^{\beta_1}/_2$) we conclude that the estimate is statistically significant, we therefore reject the null hypothesis that $\beta_1 = 0$ and accept the alternative that $\beta_1 \neq 0$ and vice versa. The conclusion of significance or non-significance of β_1 is based on a two tailed test at 5% level of significance.

The standard test is summarized below:

Variables	Std. Error	½ Coefficient	Decision	Conclusion
Constant	20.394	16.9235	$S(\beta_1)>\beta_{1/2}$	not significant
MRR	1.2246	0.39216	$S(\beta_1)>\beta_{1/2}$	not significant
INT	0.93926	0.183375	$S(\beta_1)>\beta_{1/2}$	not significant
LR	0.32361	-0.265735	$S(\beta_1)>\beta_{1/2}$	not significant
CRR	0.94088	-0.140625	$S(\beta_1)>\beta_{1/2}$	not significant
M_2	1.1829	-1.1506	$S(\beta_1)>\beta_{1/2}$	not significant

Since all the variables are not significant, we then conclude that all the variables are statistically insignificant and has no significant effect on inflation rate in Nigeria between the periods of 1980-2010.

ii.   The Student t-test

The student t-test involves comparing the t*(calculated) to its tabulated value which defines the critical region in a two tailed test with n-k degree of freedom (d.f).

Where n = sample size

K = number of estimated parameters

The null hypothesis H_0: $\beta_1 = 0$ is tested against the alternative hypothesis H_1:

$\beta_1 \neq 0$.

If the $t^* > t_{0.025}$, reject the H_0, otherwise accept H_0.

The summary of the student t- test is presented below:

Table 4.2.2b

Variable	t* cal	t – tab	Decision	Conclusion
Constant	1.660	± 2.060	t*<t-tab	Not significant
MRR	0.640	± 2.060	t*<t-tab	Not significant
INT	0.390	± 2.060	t*<t-tab	Not significant
LR	-1.642	± 2.060	t*<t-tab	Not significant
CRR	-0.299	± 2.060	t*<t-tab	Not significant
M2	-1.945	± 2.060	t*<t-tab	Not significant

The above result shows that none of the variables are significant. This means that inflation rate in the country has been mild and it supports high investment returns.

iii.   The Coefficient of Determination (R^2)

The structural variables did not explain the variation in the behavior of the dependent variable well. This is evidenced in the low value of R^2 which is 0.264235, showing that the minimum rediscount rate, interest rate, liquidity ratio, cash reserve requirement and money supply jointly accounted for only 26.42% of the variations in inflation rate in Nigeria within the period under study (1980-2010).

iv.   f- test

F –ratio is used to test for the joint influence of the explanatory variables and the dependent variable. The test for the statistical significance of the entire regression plane symbolically.

$$F = \frac{R^2/(k\text{-}1)}{(1\text{-}R^2)/(n\text{-}k)}$$

The test is employed to determine whether all the of the degree of freedom and the percentage level of significance chosen.

The calculated F-ratio (f*) is compared with the theoretical $f_{0.05}$ with $N_1=k\text{-}1$ and $N_2=N\text{-}k$ degrees of freedom that is $N_1=6\text{-}1=5$ and $N_2=31\text{-}6=25$.

Where N_1 = degrees of freedom for numerator.

N_2 = degrees of freedom for denominator.

K = number of β's (including β_0)

N = sample size

If $f^* > f_{0.05}$, reject the null hypothesis (H_0) and conclude that at 5% level of significance, the overall regression is not statistically significant.

4.2.3 ECONOMETRICS TEST (SECOND ORDER TEST)

1.   Test for Autocorrelation:

One of the assumptions of the ordinary least square (OLS) regression model is that errors are independent. In the context of time series analysis, this means that an error (μ) is not correlated with one or more of previous errors (μ-i).

The Durbin Watson d- test compares the empirical d* value, calculated from the regression residuals with d_L and du in D - W tables to their transforms (4- d_L) and (4- du).

Decision rules.

i.   If $d^* < d_L$, we reject the null hypothesis of no autocorrelation and accept that there is positive autocorrelation of first order.

ii.   If $d^* > (4-d_L)$ we reject the null hypothesis and accept that there is negative autocorrelation of the first order.

iii.   If $du < d^* < (4-du)$ we accept the null hypothesis of no autocorrelation.

iv.   If $d_L < d^* < du$ or $(4-du)$ or if $(4-du) < d^* < (4-d_L)$ the test is inconclusive.

From our regression result the

$d^* = 1.10$

$d_L = 1.090$

$du = 1.825$

$4 - d_L = 2.91$

$4 - du = 2.175$

Here d_L (1.090) $< d^*$ (1.10) $< du$ (1.825) we conclude that the test is inconclusive.

2. NORMALITY TEST FOR RESIDUAL

The J.B test of normality is an asymptotic or large sample test and it is base in the ordinary least square (OLS) residual. This test computes the skewness and kurtosis measures of the ordinary least square (OLS) residual and uses the chi-square distribution (Gujarati, 2004).

The null hypothesis for the test is,

$H_0:\beta_1 = 0$ (the error term follows a normal distribution) against the alternative hypothesis.

$H_1:\beta_1 \neq 0$ (the error term does not follow a normal distribution).

At 5% level of significance, with 2 degrees of freedom.

$$J.B = n \left(\frac{s^2}{6} + \frac{(k-3)^2}{24} \right) = 4.8688$$

While critical J.B $= (x^2(2) \text{ d.f}) = 5.99147$

Conclusion

Since 4.8688 < 5.99147 at 5% level of significance. We accept H0 and conclude that the error term follows a normal distribution.

3.   TEST FOR HETEROSCEDASTICITY

Heteroscedasticity has never been a reason to throw out an otherwise good model, but should not be ignored either (Mankiw N.G. (1990)

This test is carried out using white's general heteroscedasticity test (with cross terms). The test asymptotically follows a chi-square distribution with degrees of freedom equal to the number of regressors (excluding the constant term). The auxiliary model can be stated thus:

$$\mu_t = \beta_0 + \beta_1 MRR + \beta_2 INT + \beta_3 LR + \beta_4 CRR + \beta_5 M_2 + \beta_6 MRR^2 + \beta_7 INT^2 + \beta_8 LR^2 + \beta_9 CRR^2 + \beta_{10} M_2^2 + V_i$$

Where V_i = pure white noise error.

This model is run and an auxiliary R^2 from it is obtained. The hypothesis to be tested is:

H_0: $\beta_1 = \beta_2 = \beta_3 =$--------$= \beta_{10} = 0$ (homoscedasticity)

H_1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq$-------$\neq \beta_{10} \neq 0$ (heteroscedasticity)

NOTE:

The sample size (n) multiply by the R^2 obtained from the auxiliary regression asymptotically follows the chi-square distribution with degrees of freedom equal to the number of regressors (excluding constant term) in auxiliary regression.

The use of PC give software package saves us the above rigour (accurate) by calculating the chi-square value.

Decision rule

Reject H_0, if x^2 cal > x^2 tab at 5% level of significance, if otherwise accept H_0 (null hypothesis).

From the auxiliary regression result

x^2 cal = 10.732 while

x^2 tab= 18.307

Since x^2 cal (10.732) $<$ x^2 $_{0.05}$ (18.307). We accept the null hypothesis of homoscedasticity and reject the alternative heteroscedasticity showing that error terms have a constant variance.

4. TEST FOR MULTICOLLINEARITY

The multicollinearity test were carried out using correlation matrix.

According to Barry and Feldman (1985) criteria, "multicollinearity is not a problem if no correlation exceeds 0.80".

Table 4.2.2c

Correlation matrix

	INF	MRR	INT	LR	CRR	M_2
INF	1.000					
MRR	0.3116	1.000				
INT	0.3016	0.7752	1.000			
LR	-0.2091	-0.02571	-0.2019	1.000		
CRR	-0.1677	-0.05720	-0.1121	0.1599	1.000	
M_2	-0.2618	-0.09025	0.05515	-0.3988	0.1073	1.000

From the above table, we can conclude that multicollinearity do not exist between any of the variables.

CHAPTER FIVE

5.0   SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1   SUMMARY 0F FINDINGS

The objective of the research work, "The impact of monetary policy as an instrument of economic stabilization" is to investigate the major causes of inflation in Nigeria and to find out if monetary policies are effective in stabilizing the economy using secondary data from 1980 to 2010, the result of the analysis presents an implication for stabilizing the economy in the country using monetary policy.

Following the findings, it can be seen that minimum rediscount rate, interest rate, liquidity ratio, case reserve ratio, and money supply in Nigeria have not come to the point where inflation rate will be high. The mild inflation regime accounts for the quick investment return in Nigeria.

The insignificant nature of the above mentioned monetary variables shows that Nigeria economy is very fertile for investment.

With the above outcome, we shall accept the null hypothesis that monetary variables have no significant impact on the rate of inflation in Nigeria.

5.2 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made.

- This study posited that for inflation targeting, monetary policy to be a huge success, there should be transparency, accountability and an enabling environment which will lead to convergence of expectation around the set targets, thereby helping to keep inflation low and less variables. Bearing in mind that the policy environment of which is classified into social, political and technical, most of which does not have the required infrastructure for effective take off inflation targeting in Nigeria.

- Central bank should be independent and should be able to achieve its inflation targets.

- Central bank should not only aim at stabilizing inflation around the target but also put some weight in stabilizing the real economy.

- The study should provide a successful nominal anchor for conducting monetary policy in the countries its being adopted.

- Attempt should be made by the government to reduce the cost of production and increase exportation in order to achieve the objective of naira devaluation in Nigeria.

- Nigeria should diversify her resource base so as not to be solely dependent on oil as its export earner. The dependency on oil opens Nigeria economy to all form of shocks.

5.3   CONCLUSION

The use of monetary policy instrument for economic stabilization may be important for number of reasons which ranges from time-lags to the length of transmissions and poor policy implementation. Therefore, a great caution and great foresight should be exercised on implementing monetary policy in Nigeria because any changes that if brings about would negatively or positively affect the macroeconomic variables which greatly nature.

Although, the study has generated significant costs, slow growth, seasonal unemployment generation and high real interest rate while yielding at most, minor

benefit and also inability to reduce the so-called sacrifice ratio, unemployment cost of fighting inflation, it has also helped countries in maintaining low inflation rates, promote real economic growth, adjust monetary policy to shocks with minimal real output loss and also improves transparency and accountability leading to better communication and so help the public to understand the goals of central banks.

Macroeconomics has improved significantly and by the large measures on monetary policy in stabilizing the Nigeria economy.

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