

Impact Of Government Monetary Policy On Inflation Rate In Nigeria

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Abstract: The beginning of inflation can be said to be a direct result of the policies of the country's governments to stimulate a fast rate of economic growth and development since 1951, when ministerial government was introduced. Inflation has continued to be a leading topic in Nigeria families and press as its effect penetrates more deeply into the nation's life. Prior to SAP was found empirically that two most impotent external factors contributory to Nigeria's inflation are rising world export price and falling world output. The most important domestic or internal causes/factors were increasing government expenditures rising domestic credit creation and supply bottlenecks such as shortage of raw materials and spare parts.

Keywords: monetary policy, inflation, fiscal policy

I. INTRODUCTION

Inflation in the opinion of many scholars of economics is a worldwide phenomenon and it constitutes a challenge to both developed and developing countries alike. However, "in the case of Nigeria it is a known fact that the economy has some structural rigidity that has been undermining its systematic growth".

In the past few years, the Nigerian economy has witnessed serious macroeconomic problems characterized by slowdown in economic activities, low capacity utilization, growing unemployment, heavy debt burden, accelerated inflation, intensified exchange rate, depreciation as well as high and perverted regime of interest rates, persistently high rising government deficit financing has been identified as a major factor in the observed macroeconomic problems.

Macroeconomic policy refers to action taken by the government agencies responsible for the conduct of economic policy to achieve some desired objectives of policy through the manipulation of set of instrumental variables, this conceptualization deliberates two sets of variables, "target variables" and instrumental variables" target variables are ones for which the government seeks desirable values and are immediate goals of macro-economic policy. The instrumental

variables on the other hand are variables that the government can manipulate to achieve its economic objectives. They are necessary exogenous variables as the government must be able to determine in their values independent of the variables in the system for instance high powered money is in principle, an instrumental variable while the money supply is not. The quantity of money depends not only on the volume of bank lending which is not directly under the government control. In the same vein, tax rates are an instrumental variable while, tax revenue are -not since their values is determined not only by the tax rates set by the government, but also by the level of national income and there are usually primarily and intermediate instrumental variables employed in the pursuit of desired objectives. In Nigeria, the key macroeconomic policies are monetary, fiscal, exchange and income policies.

Monetary policy involves measures designed to regulate and control the volume cost, availability and direction of money and credit in an economy to achieve some specific macro-economic objectives (Anyawu, 1993).

Fiscal policy is taken to refer to that part of government policy concerning the raising of revenue through taxation and other means and deciding on the level and pattern of expenditure for the purpose of influencing economic activities or attaining some desirable goals.

Exchange rate also refers to the price of one currency (the domestic currency in terms of another, say foreign currency).

Income policies refer to a variety of schemes to control wages and they are measures designed to control inflation without at the same time triggering a recession.

For the purpose of this research I shall only examine monetary policy, which is one of the key macroeconomic policies and its impact in the rate of inflation in Nigeria between the period of 1986-2013.

The Nigerian economy is a rapidly growing one. In the societies, the Nigerian economy was essentially agriculture-based especially when judged by the nature of contributions of this refer to GDP and employment with the discovery of petroleum drilling and mining have become very important sector in the economy, this mining and quarrying sector has been the main source of the rapid growth of the country's economy over the last 30 years. This development not withstanding agriculture as the most dominant sector of the economy but least in terms of the volume of employment in the country's labor force. These two sectors have jointly provided the resource base of the country's wealth and economic activity.

The beginning of inflation can be said to be a direct result of the policies of the country's governments to stimulate a fast rate of economic growth and development since 1951, when ministerial government was introduced. Inflation has continued to be a leading topic in Nigeria families and press as its effect penetrates more deeply into the nation's life. Prior to SAP was found empirically that two most impotent external factors contributory to Nigeria's inflation are rising world export price and falling world output. The most important domestic or internal causes/factors were increasing government expenditures rising domestic credit creation and supply bottlenecks such as shortage of raw materials and spare parts. The SAP has worsened the situation

The rate at which the cost of food items, rents, transport, medical career education rising is beyond the meager income earned by most Nigerians because of the present inflationary pressures. Thereby subjecting the workforce of the country to poverty and hunger, since inflation has become a prevailing economic problem. It has caused complication of tasks for policy makers. Policies are implemented from monetary, fiscal; exchange rate and income policy are implanted from monetary, fiscal; exchange rate and income policy are formulated by policy makers implemented by the government to bringing policy change to the economy and to bring lasting solution to the "canker worm" eating deep into the economy. This study set to find out the following problems:

- ✓ Is the issue of inflation related to government policy?
- ✓ Why is it that between 1986 to date there has been high rate of inflation in Nigeria?
- ✓ Why is it that the rate of inflation in Nigeria is always related to the issue of government policy?

II. LITERATURE REVIEW

Monetary policy and execution are easily the most important activities of the Central Bank today because of the considerable impact of these activities have on economic development and welfare.

Recognizing the fact that the Nigerian economy today continues to experience problems of low domestic output, a high rate of inflation, unemployment and inadequate foreign exchange earnings. The budgeting process involves the translation of economic problems into policy objectives. For example, the problem of inflation could be translated into a policy of goal achieving price stability or reduction in money or credit supply. However, the more translation of problems into goals does not automatically bring solutions to every economic objective. In some instances, efforts to achieve policy objectives may result to the infection of policy instruments which in themselves could be conflicting, for example, a policy aimed at curbing inflation such as reduction in money and credit supply, supply may act as indirect opposition of the desire to reduce unemployment. A restrained credit system has no doubt the effect of reducing investment, production cycle and hence increases unemployment. This again is a problem of economic policy. A problem which appears most rental is that of identifying the appropriate policy options. The question that crisis in a given situation is, should monetary policy measure be more appropriate to curb the increasing rate of inflation in Nigeria?

However, modern economists have tended to accord monetary policy a more prominent role in their analysis of economic problems because of the relative ease with which monetary policy can be imposed and because the recurring inflationary and how deflationary tendencies in our economy is because money is frequently if not virtually always "art of order".

The aim of monetary policy is to increase the standard of living of the people. This is achieved through the implementation of this policy among others as a major instrument of achieving its macroeconomic objectives.

Recognizing that the control of inflation is a primary objective of monetary and regulating money supply is essential in achieving these objectives. Government efforts to control inflation curtailing credit initially caused rapid rise in interest rates. In 1991 Gilt planers determined the interest rate had gone too high and the 1991 budget imposed a rate of ceiling of 21 percent. Although, bankers acknowledged that lower interest rates are to be preferred in an economy but some questioned the prudence of mandatory ceiling.

Sanusi (1990) managing director and chief executive of the United Bank for Africa limited (news week of January, 15 1990 (P.40) had this to say: the imposed ceiling was justified on the grounds that it could encourage investment and increased employment opportunities and consumer demand, but he and other bankers believed that the current cap may have reduce international demand for naira adversely affecting the country's exchange rate and adding inflation.

Odebode (1991) managing director, Group, Merchant Bank (News watch Feb 4, 1991, Page 32) said the decision of the monetary authorities to peg maximum leading rate is contrary to the spirit of deregulation which is central to the structural adjustment programme he added: this policy will discourage merchant Banks from providing medium, long term

credit because it is difficult predicting the policy direction of the Central Bank of Nigeria."

According to Odozi (1990) deputy governor of Central Bank of Nigeria news watch, February, 1991(Pg33). The new standard would ensure a positive return on savings, promote growth and development as well as competitive project margins for banks on their credit. He also stated that, this measure has become necessary because the deregulation of interest rates had in recent past been accompanied by a structure of deposits and lending in inflation rate and excess liquidity in the system.

Liquidity mop up as a monetary policy became popular in 1989 when the Central Bank of Nigeria withdrew over 18 billion from circulation. The liquidity squeeze was meant to remove the excess liquidity which had too much pressure on the Nigeria exchange rate and also to bring down inflation rate.

In new watch of June 22 1991 (Pg 43), bankers agreed that the exercise was far from being successful because it had not achieved the objectives of set out to achieve. Although it has help to achieve a fairly stable rate for the Naira within the last three months, the problem of inflation is still unresolved. Apart from this, it has created a lot of inefficiencies in the market resulting in low industrial capacity wage and increased stock of unsold products.

According to lkhinwin (1990), Assistant General Manager of commerce bank said that, "whatever gains the new measures achieved in terms of naira exchange rate stability it had lost due to the high market process and low production levels. If we portrait on a scale, my opinions is that, losses surpass gains" he also said that's " the liquidity moping had also disrupted operation of otherwise well managed banks.

There are other monetary policies that are equally giving the banks nightmares. The entire policy of 1991 aimed at achieving three main objectives, a further modernization of inflation rates further reduction of the pressures on the balance of payment and the maintenance of a exchange rate.

As such monetary policies contained provision that affect many areas of the operations of the banks. One important aspect is that the government will now borrow money from banks. Also the credit ceiling, the maximum amount Central Bank are allowed to give was increased from 12.5 percent of 1990 and 13.2 percent of 1991. The aim of all these is to give the private sector better access to credit but this is not possible because the circular redefined credit to compromise not only loans and advances but also investment a lot only this, the Central Bank of Nigeria has further directed that in circulating base for growth of credit in 1991, banks should make adjustment for their credit passion of the previous.

Odozi, deputy Governor of the central bank of Nigeria said the policies will create serious problems for the already troubled banks whose capital base have been seriously eroded since 1989 due to the monetary policies of the central Bank of Nigeria and the depreciated value of the naira.

Another highlighting attraction concerning the effect of monetary policy instrument is that the increase in the minimum cash requirement is expected to reduce use of the dreaded stabilization securities (mop-up exercised as a tool of controlling money supply and curtailing inflation trends in the economy. The new move is part of the gradual implementation

of indirect approach to monetary and credit control by the monetary authorities last year.

Speaking on the issue, Mr. Jany Ede a senior Central Bank of Nigeria Manager corporate affairs (the guardian, august 3,1997 {Pg 19) had this to say "the increase in the cash in additional to statutory required 30 percent liquidity ratio for banks was enough to mop-up excess fund in the economy without regular resource to the stablisation securities which many banks cried out against"

It was also noted that the increased in cash reserve of banks would be effective as a monetary control measure if government fiscal operation which have been a persistent source of excess liquidity injection is not checked.

The Central Bank of Nigeria director of research in a paper titled " Evolution and Performance of monetary policy in Nigeria" said that, there is need for greater harmonization of fiscal and monetary policies, adding that any system of monetary that control that does not do this bond to be available.

In a paper presentation titled "Indirect Monetary Control in Nigeria Problems and Prospects" (Dec 2 1991) the governor of Central Bank of Nigeria Alhaji A. Ahmad had this to say on credit control and the effort to deregulate .all sector of the Nigerian economy through the structural adjustment programme introduce in 1986have considerable influence on development in the financial sector. In that sector, reforms have taken the firm of implication of the format for sectorial credit collections, deregulation of bank deposits\ and liberalization of financial deregulation is one under which the cost and availability of credit are determined through the financial markets. This step often referred to as the indirect approach to monetary control as against the direct approach which relies on the imposition of credit ceiling on banks by the monetary authorities.

Consequently, the governor also made mention of the fact the strategy to be adopted for achieving macroeconomic objectives would continue to rely that on the existing direct imposition of credit. The use of market-based instrument becomes more conclusive the suggests that the Central Bank of Nigeria {CBN) monetary authorities are not sure of the effectiveness of its policies on credit control in Nigeria.

The wage increase of 15 percent in 1993, Abubakar 's increase in 1998, Obasanjo 's minimum wage and the 2011 minimum wage compiled with ominous adjustment of prices of petroleum products to reflect current opportunity cost many add another dimension to inflationary pressure in Nigeria. In addition, the deregulation of the downstream oil sector announced in Nigeria in October .152003 by Obasanjo has warfare the price level in Nigeria.

The current plant to increase minimum wage to N15, 000 per Nigerian worker in 2011 and the consequent plan to remove oil subsidy has no doubt increased the rate of inflation. The oil glut from 1981, that resulted into balance of payments deficit also led to foreign exchange crises that necessitated various measures of import restrictions. These restrictions reduce raw materials for domestic production and spare part for machinery operation. The resulted shortage of goods and services for local consumption spurred the rate of inflation rise from 20% in 1981 to 39% in 1984 {Itua, 2000).

Finally, the various effort of Nigeria government to curb inflationary trends, inflation rate continued to cause set back in the growth rate in the standard of living of most Nigerians who are freed income earners or unemployed {Agha1984}. inflation has had adverse effects on balance of payment in Nigeria hence the fall in the growth in the Gross Domestic Product (GDP) from 26.8% to 5.4% (2000) and 3.5% {2002}, according to Fatukasi {2011}. Given the constant set of prices today, a situation of relatively much money chasing few goods. The same bundle of goods and service tomorrow with constant real wage income implies adjustment in consumption pattern.

A. THEORETICAL FRAMEWORK

The paper is centered on the monetarist school of thought. The monetarists used the quantity theory of money as the framework for explaining the relationship between money supply and the price level. According to Jhingan (2006), the monetarists emphasize the role of money as the principal cause of demand-pull inflation. They contend that inflation is always a monetary phenomenon. Price tends to rise when the rate of increase in the money supply is greater than the rate of increase in real output of goods and services (Johnson, 1973).

The monetarist are twentieth century economists who criticizes the Keynesian economics and lay emphasis on the importance of monetary policy especially money supply, they represent a modern variant of macroeconomic. Indeed, classical evolution neo-classica who in a sense evolved into monetarists.

Professor Milton Friedman who is regarded as the chief architect of the monetarist view is responsible for the intellectual revival of the quantity theory in the post-world war 11 period, a revival that has for some years provoked the good deal of commentary and critical interpretation.

The center of the monetarist of money focused on how the quantity of money demand would vary with interest rates. However rather than merely include income and interest rates in the analysis (as was done in the Keynesian Is Lm formulation) monetarist. In their discussions of the workings of monetary policy used a less formal approach that allowed them to include multiple interest rates and wealth (or permanent income) as key variables in their discussion. Thus, Milton Friedman (and Friedmanism) and monetarism are also synonymous, he both founder of and principal spokesman for the monetarist doctrine.

Monetarist considers the economy basically stable with most elements of instability the product of faulty monetary arrangements or improves policy. That is, there is a stable but not precise relationship between the growth rates of money and nominal income. If money balances growth more rapidly in relation to income and nominal income than people wish, they will attempt to spend the excess causing prices to rise. On the other hand, if money grows too slowly in relation to income, people will try to build up their cash balances by reducing spending which will try to build up their cash balances by reducing spending which will result in the slowing of income growth and rising unemployment.

Monetarist consider fiscal policy when not accompanied by changes in the money supply to be an unlikely source of

economic change. Long-run real economic growth is thought to be independent on monetary change, being determined by basic growth factors such as expending productive capacity, population growth advancing technology and natural resources.

The rate of interest rate in policy transmission process is seen as follows, acceleration and deceleration of monetary impulse are converted by the variations of prices or interest rates into increased or reduced production and subsequent revisions in supply prices of current output. The monetarist view Money Supply as the strategic variable affecting income directly.

OMO → MS → spending → GNP

Recorded interest rates do not reflect the real cost of capital but rather include anticipated rates of inflation. Prices are a function of "demand pressure" determined by how close to full employment the economy is operating. Furthermore, an accumulation of prices changes tends to generate "price expectation" which stand as a separate influence in future price movements. Monetarists believes that wages and prices are quiet flexible. Although the growth of money is of prime importance in determining the behavior of GNP it occurs in long and variable lags.

Many distinguished scholars have written and discussed about the concept of inflation using different approaches with a view to arriving at a viable solution to the problems.

One of the concepts of earliest studies in this regard was that of A.C Harberger (1963) who presented an empirical study of the inflation the purpose of which was to establish a strong relationship between the rate of inflation and the rate of monetary expansion. Using the monetary approach, Harbarger viewed monetary wage increase as the passive outcome of general inflationary process not in motion by monetary expansion against what he calls the "neo-orthodox" approach which accepts the fundamental sources of inflationary pressures to be found in an imperfectly functioning labor market. Hence, Harberger mercy serves to influence the process of wage push inflation, but however some of the regression equation used by Herber in his model were not satisfactory because most of the independent variables like the rate of growth of credit expansion and the price expectations were not incorporated into his regression equation and as a result of these reasons, not much credence can be given to the result of Herbenger study.

Owosekun and Odama 1973 carried out an empirical study on the causes of inflation in Nigeria. The two authors postulated that Nigeria inflation is influenced by four variables namely; cost, demand, money and supply and they are used as close substitute for cost which is the price index of nominal or traced wages or price index of raw materials. The two authors found out that the monetarist model was unable to explain the inflationary process although when variables structural models were included in the test such as aggregate demand cost and price expectation arrive at their conclusions. The evidence of price increase in Nigeria is indicated by a combination of some economic factors that led to contribute to the cause and dynamics of inflation in Nigeria. The primary aim of this study was to ascertain the relative contribution of monetary and structural factors to the price, the rate and dimension of inflation in Nigeria.

From the above, it could be stated that Ojo 's finding seems to collaborate with that of Owosejun and Adams and reveal that neither the monetary nor the structural model is able to completely explain the cause of inflation in Nigeria. So Oja suggested that the combination of variables from both models give better indication of causal factors. Research conducted by the Anti-inflationary task force reveals that the factors responsible for cost push-inflation are as follows, inadequate supply of locally, produce imported commodities, high cost of domestic manufactures arising from high wage cost, low productivity, etc low agricultural output and inefficient storage facilities and market arrangements, monopolistic practices etc. The anti-inflationary task force goes further to give the following factors responsible for demand pull inflation; high spending which public expenditures, wages and salary increase either by government or private sectors, great increase in money supply, increase in demand caused by future anticipation in price increase, etc. It must be noted that virtually all studies on the causes and factors of inflationary trend discussed above suffers from inadequate and discontinuous data base as well as from imprecise variables all of which would vary in degrees.

Ayodele and Emmanuel (2005), assumes that the price level will change proportionately with changes in the quantity of money. This belief is often summed up in the phrase, "money is in the long-run neutral. The rate of money creation is reflected in the rate of inflation in the long-run. In further posits the existence of the existence of classical dichotomy between relative and absolute price determination. The crude quantity theory, focusing in long-run relationships post that the theory of value explains the relative prices (because they are determined in the real sector) while monetary theory explains absolute prices. A change in the quantity of money will only change the general level of absolute prices or will not affect output or relative prices (Lucket, 1980).

According to Glahe (1977) it must be noted that the monetary conclusion is based on the joint validity of a particular assumption about the demand for and supply of money. They are both assumed to be perfectly interest elastic. This is what is referred to as the exogeneity of money. The monetarists contention hence goes thus, given the level of real money do not change alone with changes in the level of interest rate. For the derivation of the general equilibrium, the equilibrium in the real {goods} market is needed which together with the money market equilibrium field the general equilibrium level referred to as the aggregate demand in the economy, while the full employment level fields to what is referred to as aggregate supply level. Therefore, national income and price are determined by the equilibrium of aggregate demand and supply (Omofa, 2000).

An increase in equilibrium in the goods market will only lead to an increase in the rate of interest with little or no impact on the income and price level. It thus be said that the impact of fiscal policy is not necessary since it may not yield the desired result. If on the other hand, nominal money supply is increased through Central Bank, it will result in an increase in the money market equilibrium. Thus now meets the original equilibrium in the goods market at full employment which results in higher aggregate demand than when fiscal policy was embarked upon. As a higher level of national income and

price level (Omofa, 2000). The quantity theorists established a direct relationship between money supply and price level.

Thus, the monetarists employ the familiar identity of Fisher's equation of exchange

$$MV = PQ$$

Where

M = Money supply

v = Velocity of money in circulation

p = Aggregate price level

Q = Level of real output/aggregate output

Assuming V and Q are constant, the price level (p) varies proportionately with the supply of money (M). with flexible wages, the economy was believed to operate at full employment levels. The labour force, the capital stock technology also change only slowly overtime. Consequently, the amount of money spent did not affect the level of real output so that a doubling of the quantity of money will result simply in doubling the price level until price has risen by this proportion, individual and firms would have excess cash which they would spends, leading to rise in prices.

So inflation proceeds at the same rate at which the money supply expands (Jhingan, 2006).

No discussion on monetary policy and inflation will be complete without reference to the relationship between inflation and unemployment referred to the Philips curve. Over the last decades a good deal of debate has centered on his concept not only within the economic profession but also political debates. The term itself originated from a celebrated paper by A. W. Philips of London University School of Economics and Political Science which on the basis of evidence drawn from

U.K between 1857-61, he showed the existence of negative but non-linear relationship between percentage increase in wage and that of labour force unemployed. The basic idea behind Philips original work was a fairly, straight forward application of the principles of supply and demand to the labour market, one of the corner stone of economic theory is the notion that the price of any product or service is determined by supply and demand. If the demand for a product or service is at the prevailing prices, then the supply coming to the market, the price will fall down. In both cases, we can also assume that the rate at which the price rise or fall is related to the discrepancy between demand and supply. As the wage rate increases, price of labour services increases and as the services are exchanged in the market it seems reasonable to assume this on the same ground as prices in the other markets. When the demand for labour is higher, we expect unemployment to be relatively low and employers to be bidding against each other to attract existing labour to their particular companies. In the process therefore, wage rate would be rising rapidly. On the other hand when the demand for labour is low unemployment would be relatively higher and firms would not have to compete so aggressively against each other to attract additional workers. As a result, wage would not be rising rapidly.

In the decades following Philips contributions in 1958, the curve was hailed by the majority of economists and policy makers as one of the great empirical laws of economics. Philips curve was constructed for most developed counties and the concept of a trade-off between inflation and

unemployment quickly found ways to text books which dealt with macroeconomics.

The Philips curve appears to be clarify, the meaning of full employment which was defined as the particular employment level which happens to equilibrate the labour market. This employment level was compatible with any rate of inflation. The curve however, shows that full employment curve can be thought of as the co-existence of some unemployment and some inflation in a capitalist economy working and or near full capacity. Employment was to be thought of as a region or zone in which it could be varying combination of inflation and unemployment. Another reason for the popularity of Philips curve was that it appeared to satisfy a definite set of choices. It is impossible to achieve full employment and price stability which happened to be part of the objectives of monetary policy, because the region to the left of the Philips curve was unattainable. While to the right, the region was undesirable because it means higher rate of inflation and a higher level of unemployment. The best that economy could do was to move along the Philips Curve.

Here, the choice was between less inflation at the cost of higher unemployment or less unemployment but at the cost of more inflation. However unpalatable the menu might seen in that both inflation and unemployment were in themselves undesirable. The trade off was assumed to choose the exact point that country choose would depend very much on its previous history of inflation and unemployment. Philips curve could also be used to show the impact of different types of economic policy curve.

III. INTRODUCTION

The topic being the impact of government monetary policy on inflation rate in Nigeria as was stated in the introduction, the topic was restricted to the noticeable effect of monetary policy on the inflation rate which covers twenty-seven (27) years from 1986-2013.

A. SOURCE OF DATA

For the purpose of this study, secondary data was employed. Time series data has been found to be relevant in this regard. The data was mainly obtained from Central Bank of Nigeria (CBN) statistical bulletin 2013 and Federal Office of Statistics.

B. METHOD OF DATA ANALYSIS

This intends to use simple regression analysis, using ordinary least square method in estimating the impact of monetary policy on inflation rate. Simple regression in general mean the model in which dependant (endogenous) variable depend on one explanatory (exogenous variable) where ordinary least square method in particular is a method for estimating the unknown parameter in a linear regression.

C. MODEL SPECIFICATION

Model specification refers to the description of the process by which the dependent variable is generated by the dependent variable. Thus, it encompasses the choice of independent {and dependent) variables, as well as the functional form connecting the independent variables to the dependent variable. Under this research, the dependent variable is the inflation rate while the independent variable is the money supply. The functional relationship is written as

$$INF = f(m_2) \quad - - - - - \quad -3.1$$

The above equation shows the functional relationship between inflation rate and stock of money. This followed from the fact that inflation can be caused by increase in the stock of money in an economy. Alternatively, monetary analysis on inflation can be demonstrate using Irvin Fisher equation of exchange as given below:

$$MV = PQ \quad - - - - - \quad -3.2$$

MV is the total monetary expenditure in an economy i.e money stock multiplied by the number of time the money stock turns around (velocity of circulation) and PQ is the value of total output of the economy.

However, the original classical quantity theory of money assumes V and Q to be constant. Therefore, changes in M produce proportional changes in P₁ thus;

$$P = f(m) \quad - - - - - \quad -3.3$$

Using the price level (p) as the proxy of inflation rate, equation 3.4 is transferred into equation 3.1 and which in turn can be further expressed in mathematical form as follows

$$Inf = a_0 + a_1 m_2 \quad - - - - - \quad -3.4$$

Economically, the equation 3.4 above can specified as;

$$Inf = a_0 + a_1 m_2 + e \quad - - - - - \quad -3.5$$

Where e is the error term

D. DIAGNOSTIC SPECIFICATION TEST

This encompasses the use of test in order to ensure the BLUE property of the data (that is Best Linear Unbiased Estimation) estimation so that the data can be used for policy making. It involves three stages namely;

- ✓ First Order Specification (a priori expectation)
- ✓ Second Order Specification
- ✓ Third Order Specification

a. FIRST ORDER SPECIFICATION (APRIORI EXPECTATION)

The apriori expectation is in respect with the theorized expectation or economic theory of the parameter estimated. The parameter in this research is expected to be positive given that inflation rate which is the endogenous variable is positively related with the exogenous variable (money supply (m₂)).

b. SECOND ORDER SPECIFICATION

R² measure the goodness of fit of the regression, that is, it gives the proportion of percentage of the total variation in the dependent variable (y) explained by the independent variable (X). R² has two important properties.

It has a non-negative quantity; its limit is between one and zero that is:

$$0 \leq R^2 \leq 1$$

R^2 of one means perfect fit, on the other hand, R^2 of 0 means that there is no relationship between the regressed and the regressor whatsoever.

A test of significance is a procedure by which sample results are used to verify the truth or falsity of the null hypothesis. The key idea behind test of significance is that, the test of statistics (estimators) and the sampling distribution of such a statistics under null hypothesis is made on the basis of the value of the test statistics obtained from the data at hand.

c. THIRD ORDER SPECIFICATION

This is the use of Jaque bera test, the auto correlation and lastly heteroskedasticity test of the residuals to ensure the normality assumption of the error term, which signifies BLUE (Best Linear Unbiased Estimator) in order to ensure the stability of the parameters, so that the data can be used for policy formulation.

IV. INTRODUCTION

This chapter seeks to analyze the role of monetary policy in the control of inflation or rather its impact on the rate of inflation in Nigeria as well as achieving the general objectives of government monetary policy. The research will identify the relationship between monetary policy and inflation in Nigeria and its impact on the economy. The model show in the equation is estimated by ordinary least square (OLS) method using the E-view statistical software version 7 and the result obtained will be used to answer the proposed questions earlier raised. Thus, the chapter presents the resulted and therefore deduces some policy implication of the findings. The simple regression model is employed as a methodological approach towards presenting the facts obtained.

A. PRESENTATION OF RESULTS

a. ESTIMATE RESULTS

$$INF = a_0 + a_1 M_2$$

Where $a_0 = -356.2671$ and its standard error is 228.20206

$a_1 = 14.59490$ and its standard error is 1.056131

$$INF = -356.2671 + 14.5949$$

$$S.E = (28.20206) \quad (1.056131)$$

$$TVAL = (-12.63266) \quad (13.81902)$$

$$R^2 = 0.860339$$

$$\text{Adjusted } R^2 = 0.855833$$

$$F\text{-statistics} = 190.9653$$

Source: Researchers Computation using E-view7

B. DISCUSSION OF RESULTS

The E-view was used to obtain the results to test the impact of government monetary policy on the rate of inflation in Nigeria. The result shows that the intercept of the model is negative indicating that holding the influence of M^2 constant, the rate of inflation is about 356.26%.

The slope which is the coefficient of money supply (M^2) is 14.59470 which is positive with a t-statistics of 13.81902. The coefficient is thus statistically significant at 5% level of significance, because the value of the t-statistics of 13.81902 is greater than the t-critical of 2.06. This implies that money supply is an important determinant of the inflation rate. The positive sign of money supply (M^2) is positively associated with inflation rate in Nigeria. This result is consistent with economic theory, which posits the existence of a positive relationship between money supply on one hand and the rate of inflation on the other.

The coefficient of determination R^2 which is the proportion of the total sum of squares explained by the model and provides a measure of how well observed outcomes are replicated by the model, as the proportion of the total variation of outcomes explained by the model showed that the model has reasonably good fit. It showed the overall fitness of the model is found to be 0.86 indicating that about 86% of the variation in the rate of inflation in Nigeria during the period under consideration is explained by the model or by money supply (M^2). The remaining 14% could be explained by other variables not included in the model.

E. HYPOTHESIS TESTING

The individual test of significant which will follow the t-distribution and the overall test of significant which will follow the f-distribution will be analyzed.

a. INDIVIDUAL TEST OF SIGNIFICANCE

Significance test of α_0

$$H_0 : \alpha_0 = 0 \text{ (Statistically insignificant)}$$

$$H_1 : \alpha_0 \neq 0 \text{ (Statistically significant)}$$

At $\alpha = 0.05$ or 5% level of significance, $n=28$, $k = 2$

$$t_{ab} = t_{0.05/2}^{28-2} = t_{0.025}^{26} = 2.06$$

$$t_{cal} = |-12.63|$$

Given that $t_{cal} > t_{ab}$ we therefore reject the null hypothesis and accept the alternative hypothesis and conclude that α_0 statistically significant.

Significant test of α_1 ,

$$H_0 : \alpha_1 = 0 \text{ (Statistically insignificant)}$$

$$H_1 : \alpha_1 \neq 0 \text{ (Statistically significant)}$$

At $\alpha = 0.05$ or 5% level of significance, $n=28$, $k = 2$

$$t_{ab} = t_{\alpha/2}^{n-k} = t_{0.025}^{26} = 2.06$$

$$t_{cal} = |-12.63|$$

Given that $t_{cal} > t_{ab}$ we therefore reject the null hypothesis and accept the alternative hypothesis and conclude that α_1 is statistically significant.

b. OVERALL TEST OF SIGNIFICANCE

$$H_0 : \alpha_0 = \alpha_1 = 0$$

$$H_1 : \alpha_0 \neq \alpha_1 \neq 0$$

Or at least one of the parameters is statistically significant

$$F_{cal} = 190.9653$$

$$F_{ab} = F_{v_1, v_2}^{\alpha} \neq$$

Where $Y_1 = K-1 = 2-1 = 1$
 $Y_2 = n-k = 28-2 = 26$
 $\alpha = 0.05$ or 5% level of significance
 $\therefore F_{\alpha b} = F_{126}^{0.05} = 4.23$

From the results obtained, the F-value is 190.97 while the F-critical at 5% level of significance is 4.23, Given that the F-calculated is greater than the F-tabulated ($F_{ca} > F_{tab}$), the conclusion is that the coefficients of the parameters estimated are statistically significant or, we reject the null hypothesis $\alpha_0 = \alpha_1 = 0$ which states that all parameters are statically insignificant and accept the alternative hypothesis which states that the parameters are statistically significant.

c. CONCLUSION OF TEST OF HYPOTHESIS

1 unit increase in M_2 will lead to a 14.59 unit increase in inflation or put it differently, the responsiveness of the inflation rate to M_2 is 14.59, which shows that inflation rate is highly elastic to M_2 .

A 5% level of significance, the first null hypothesis which states that changes in the level of money supply has no significant effect on the rate of inflation in Nigeria is rejected as the t-test revealed that changes in the level of money supply have a significant influence on inflation rate in Nigeria, the alternative hypothesis is therefore accepted.

C. TEST FOR SERIAL CORRELATION

As the Breusch-Godfrey serial correlation test shows there is no problem of serial correlation in the data since $n \cdot R^2 = 30.03103$ is greater than the chi-square.

D. TEST FOR HETEROSKEDASTICITY

As the Breusch-Pagan-Godfrey results shows, there is no problem of heteroskedasticity since $n \cdot R^2 = 3.3831133$ is greater than the chi-square critical at 5% level of significance.

V. CONCLUSION

This study assessed the effectiveness or the impact of money supply on inflation rate in Nigeria. This analysis is done using the E-views7. It adopted the monetarists approach based on its usefulness for the purpose at hand.

From the various econometric tests carried out, it was revealed that money supply have a significant impact on the price level in Nigeria. The implication of this result is that the emphasis by the monetarists on the relative effectiveness of monetary policy in controlling inflation may be the best policy for the Nigerian economy. This assessment became crucial in view of the role of monetary authority in Nigeria, which is anchored on the use of monetary policy that is usually targeted towards achieving price stability, full employment equilibrium, rapid economic growth and external balance. Imports budget deficits and population are important variables in explaining variation in the price levels, though with a negligible effect on it.

A. POLICY RECOMMENDATIONS

Based on the findings of the study, the following recommendations are hereby made: That the monetary policy in Nigeria should be set in such a way that the objective meant to be achieved is well defined.

- ✓ The cost of inflation - focused monetary regimes should be checked more than anything else. The cost of inflation-focused monetary regimes is to divert the attention of some of the most highly trained and skilled economists and policy makers in Nigeria away from the previous tasks that the previous generations of central bank took for granted as being their main job: to help this country develop to create jobs and to foster socially productive economic growth.
- ✓ It is always crucial for central banks to balance their control instruments with crucial task of macroeconomic stabilization. Otherwise both stabilization and development will be lost.
- ✓ The Central Bank of Nigeria should continue to focus on controlling the growth of money stock through a restructure momentary policy.
- ✓ Government should pursue a conservative fiscal policy by reducing substantially the fiscal deficit, it should be noted that fiscal deficits when financed through the financial system as currently done in Nigeria will not only increase aggregates but impure directly on the money supply.
- ✓ Recommendation iv above underscore the need for monetary and fiscal coordination as they complement each other. Government should not be pursuing a liberal fiscal policy when the Central Bank is advocating restraint in the face of maintain pressure on the price level.
- ✓ To control inflation, there should be control of money supply by way of reducing government fiscal budgeting and society need to be sanitized in ensuring fiscal discipline.
- ✓ Also, government should stimulate the productive capacity of the economy especially the agricultural sector to increase food production so that process will come down and consequently reduce inflation.
- ✓ Interest rate in Nigeria should be totally liberalized it is expected to be a strong monetary instrument of price level and output movement. The forces of demand and supply would be allowed to determine their own rate in Nigeria.
- ✓ Independent of the Central Bank of Nigeria: This will bring about a qualitative decision making and freedom to operate within its stipulated rules without any external interference.
- ✓ Remedial measures of inflation could also include, price controls and quantity rationing, restrictive monetary and fiscal policies, quantitative controls (quotas and tariffs) and institutional reforms and establishment of special agencies wages commission and consumer protection commission. In spite of all these measures, inflationary pressures persisted. In response to some of the policy initiatives including improved supply of foreign exchange stability in naira exchange rate, sustained fiscal discipline and tight monetary policy has since 1996 assumed a downward trend. To further curb inflation, a comprehensive set of measures aimed at increasing domestic output and should be applied consistently.

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