

Effectiveness of Monetary Policy in Controlling Inflation in Nigeria

Ogunjinmi Olusola.O.

Department of Economics, Lead City University, Ibadan, Oyo State, Nigeria

Abstract: This paper investigated the effectiveness of monetary policy in controlling inflation in Nigeria using secondary annual data spanning from 1981 to 2019. Specifically, the paper examines if there exist any form of relationship between monetary policy and inflation in Nigeria. Money Supply, Treasury Bills Rate, Monetary Policy Rate and Exchange Rate were the variables used in the study to check inflation. The paper employed Johansen cointegration method to check for the long run relationship between the variables. Ordinary Least Square (OLS) was adopted because of its property of Best Linear Unbiased Estimator. The Johansen co-integration test revealed the existence of long-run relationship between the variables. However, the empirical result of the OLS test showed that monetary policy rate, money supply and treasury bill rates exert influence on inflation in Nigeria. While exchange rate depreciation leads to inflationary growth. This result is consistent with the prediction of economic theory. The study therefore concluded that money supply, treasury bills rate, monetary policy and exchange rate had influence on inflation within the period under consideration and recommends that monetary authority should put in place schemes to make them more effective perhaps by offering competitive rates and the nation Nigeria shift from being a consumption driven (import) economy to production based (export) economy for the impacts of these policies to achieve desired results.

Keywords: Money Supply, Treasury bills rate, monetary policy rate, exchange rate, inflation, co-integration.

I. INTRODUCTION

Monetary policy is the combination of actions, steps and decisions taken by the monetary authority (Central Bank) to control the supply of money in the country, with the objective of promoting price stability and economic growth. The connection between money in circulation and inflationary rate are the main indicator for the measurement of an economy's prosperity, performance and growth abilities. The regulation of the volume of money in circulation and maintaining price stability has been one of the main objectives of emerging nations such as Nigeria. Chaudire, Ismail, Farooq & Murtaza: Monetarist economist has maintained that there is an indicating relationship between inflation and money supply and uncontrollable increase in the volume of money may have adverse effect on economic condition. The Keynesians however believe in the efficacy of fiscal policies – government expenditure and revenue in dealing with inflation; while the monetarists believe inflation can only be managed through controlling excess liquidity and money supply in circulation. (Ruby, 2003; Blinder and Rudd, 2008)

Adodo, Feyisayo Loveth 2018 observed that irrespective of the policy thrust of policy makers in controlling inflation, just a little have been achieved in curbing the threat of inflation in Nigerian economy as inflation is the leading cause of economic impedance and social and political unrest in developing countries like Nigeria. Furthermore, the paraphernalia of general price increase include continuous fall of the purchasing power of money, inequality in distribution of income, loss of social welfare due to price increases and fall in reserves and investments.

Su Dinh Thanh 2015 believes that inflation causes excessive relative price variability and misallocation of resources.

Inflation is the general rise in the price of goods and services. The delinquent of inflation has always been a problem as a result of its effect on overall economic activities. Persistent rise in the general price of goods and services leads to the decrease in the value of money, this leads to fall in unit or quantity of goods and services a currency can buy. Inflation can as well result to rise in the cost of production, and excess of demand over supply.

One of the fundamental objectives of Central Bank of Nigeria is to sustain price stability in the economy through monetary policy. This is achieved by ensuring the rate of inflation is sustained within a certain limit to enable a sustainable economic activity in all facets of the economy.

This study is significant in that it intends to contribute to the existing body of knowledge, given the fact that is commonly said the monetary policies are part of the governance rituals and that huge number of below-average income earners, is the reason for poor industrialization of Nigeria as a result of the stringent credit policies of banks and other financial institutions, and the unpredictability of the Nigerian economy.

II. LITERATURE REVIEW

I. The Structuralists' view of Inflation: The structuralists' approach was developed mainly in Latin America (Harberger, 1963). This school of thought is of the opinion that though money supply may increase along with price level, the increase in money supply is only a response to inflation rather than its cause. They felt the cause of rising prices is due to the pressure of economic growth on an underdeveloped social and economic structure like in Nigeria. Their focal areas of analysis in terms of the causes of inflation are; import substitution (exchange rate) and money supply amongst others.

II. The Monetary Theory of Inflation: Modern quantity theorists view inflation as a monetary phenomenon that arises from a rapid expansion in the quantity of money than in total output (Friedman, 1956). Inflation everywhere is said to be based on an increased demand for goods and services as stated in the fact that people try to spend their cash balances (Jhingan, 2003). Their conclusion was that inflation is always a monetary phenomenon relying on Fisher's equation; $MV=PQ$ Where; M- money supply, V- velocity of money, P- price level, Q- level of real output. V and Q are assumed constant, while the price level (P) varies proportionally with the supply of money (M). In Nigeria, the attempts made to reduce the inflation rate have mainly been by adopting a monetarist approach and not the structuralist approach (Sanni and Folarin, 2010).

III. Monetary Policy and Inflation in Nigeria: The monetary policy experience in Nigeria could be divided into two broad policy regimes. They are direct and indirect method of control.

The Direct Method of Control: This period lasted from 1959 - 1985. Banks operated passive monetary regime where control of monetary instruments was partially relaxed to focus on developing and maintaining a sound currency in the period 1960-1962. In 1962/63 the focus was on development with emphasis on adequate supply of credit to the economy with minimal inflationary pressure. But in the period (1966 - 1972), the policy direction of the monetary authority was lifting of restriction to enable the government prosecute the civil war. This resulted in deteriorating balance of payment position and inflationary pressure. However, policies were adopted for the remaining part of the period to reduce inflation. Given the rising oil prices in the period (1972-1976), the policy measures tilted towards expanding domestic aggregate output and reducing inflationary pressure. Because of the excess liquidity, selective credit control policy was used supported by interest rate and exchange rate policies with a view to stabilizing the system. Monetary restraint policy continued to be in place up till 1981 due to excess liquidity in the system. However, between (1981 - 1985) major changes which include: marginal upward adjustment of interest rates, loan advances to favour preferred sectors (agriculture and manufacturing) and unchanged cash reserve requirement was in place CBN (2001).

IV. The Indirect Method of Control: This period started in the year 1986 when Structural Adjustment Program (SAP) was introduced. The primary aim of SAP was to restructure and diversify the productive base of the economy. In addition, SAP was designed to establish a realistic and sustainable exchange rate for the naira through trade and payment liberalization, tariff reforms and commercialization and privatization of public enterprises. As a direct consequence of the Structural Adjustment Programme (SAP) 1986, monetary policy was refocused to a one-year perspective. A number of monetary targets and instruments were adopted which include, Open Market Operation (OMO) conducted wholly by using

the Nigeria Treasury Bills (NTBs). This continued to be the primary technique of monetary policy. Other instruments include interest rate policy deregulation through proactive adjustment of minimum rediscount Rate (MRR), discount window operations and unification of the official and inter-bank exchange rate in 1999 (Uchendu, 2009).

III. EMPIRICAL LITERATURE

The relationship between monetary policy and inflation in Nigeria was investigated to empirically ascertain the effectiveness of monetary policy in controlling inflation in Nigeria. Annual time series data, sourced from Central Bank of Nigeria (CBN) Statistical Bulletins (1985-2012) were used to analyze and estimate the three multiple regression models drawn up, with the aid of Software Package for Social Sciences (SPSS).

Furthermore, the existence of long run relationship between inflation and economic growth in Bangladesh was investigated using annual data from 1978 to 2010. The study adopted the co-integration and Granger causality test and used the GDP deflator (GDPD) as a proxy for inflation and the GDP as a perfect proxy for economic growth. The Johansen co-integration technique test showed that there is no co-integrating relationship between inflation and economic growth and the causality test revealed a unidirectional causality running from inflation to economic growth and concluded that inflation impact on economic growth^[7].

IV. DATA AND METHODOLOGY

The research is quantitative in nature. In the empirical analysis, E-views 9 econometric software is employed. The regression analysis will be used to estimate the relationship between the endogenous variable Inflation rate (INF) and exogenous variables Monetary Policy Rate (MPR), Treasury Bills Rate (TBR), exchange rate (EXG) and Broad Money Supply (M2). To examine the ability of the variables to predict each other over the study period, Granger Causality will be used.

This study used secondary annual data spanning from 1981 to 2019 on the variables: INF, MPR, TBR, EXG, and M2 for the empirical analysis. The data is obtained from the publication of Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS). The choice to study period is informed by data availability.

1. Model specification

Specifically, the study investigated the relationship between inflation (the dependent variable) and the Monetary Policy variables proxied by: Monetary Policy Rate (MPR), Treasury Bills Rate (TBR), Exchange rate (EXG) and Money supply (M2) in Nigeria. The model is specified as follows:

$$INF = f(M2, MPR, TBR, EXG, \dots) \dots \dots (3.1)$$

The above regression model was translated into a regression equation as stated below:

$$INF = \beta_0 + \beta_1 M2 + \beta_2 MPR + \beta_3 TBR + \beta_4 EXG + \mu \dots \dots (3.2)$$

where; M2 = Broad Money Supply MPR = Monetary Policy Rate TBR = Treasury Bills Rate EXG = Exchange Rate

β_0 = Intercept, $\beta_1, \beta_2, \beta_3$ = are coefficients of the explanatory variables, and each, as expected $\neq 0$, μ = is Stochastic error term

The variables are employed in their log form as follows:
 $LINF_t = \beta_0 + \beta_1 LM2_t + \beta_2 LMPR_t + \beta_3 LTBR_t + \beta_4 LEXG_t + \mu_t \dots \dots \dots (3.3)$

where: LINF – log of Inflation, LM2 – log of Broad money supply, LMPR – log of monetary policy rate, LTBR – log of Treasury bill rates, LEXG – log of Exchange rate, t- signifies time, β_i - the coefficients, μ - the error terms.

The a-priori expectation is that a positive relationship is established between inflation growth and each of the monetary policy variables.

I. *Cointegration Test*

Co-integration is the existence of a long run equilibrium relationship in time series variables. The result of the unit root test will allow for co-integration procedure if and only if the variables are all stationary or all non-stationary. This study will consider Johansen co-integration test, because it provides more powerful alternative to the Engle-Granger test, and also it is a multivariate VAR-based approaches that allow for all variables to be endogenous.

II. *Ordinary Least Square*

Multiple regression of Ordinary Least Square (OLS) technique is employed. OLS was chosen because of its properties of Best Linear Unbiased Estimator (BLUE). The OLS estimation is conducted using Econometric views (E-views 9). The estimated model is evaluated using diagnostic and summary of statistics such as t-statistics, coefficient of determination (R^2), F- statistics, Durbin Watson (d) statistic etc.

III. *Granger Causality Test*

The Granger Causality test is used to indicate if a variable can be used to predict another variable. The test will allow us to know if there is a uni-directional, bi-directional or no causal relationship between monetary policy and inflation along with other chosen variables in the study.

The model can be specified as

$$y_t = \alpha_1 + \sum_{i=1}^{nm} \beta_i x_{t-1} + \sum_{j=1}^{nm} \gamma_j y_{t-j} + e_{1t} \quad (3.6)$$

$$x_t = \alpha_2 + \sum_{i=1} \theta_i y_{t-1} + \sum_{j=1} \delta_j x_{t-j} + e_{2t} \quad (3.7)$$

When the lagged values of x_t are significant in explaining y_t , x_t

granger cause y_t and vice versa. When lagged x_t and y_t are significant in each other's equation, there is bi-directional causality, while the insignificance of the variables in explaining each other implies no causality among them (they are independent). The standard joint F- test is used to examine the Granger causality in a VAR system [1].

The granger causality test hypothesis:

H_0 : monetary policy does not granger cause Inflation

H_1 : monetary policy granger causes Inflation

Decision Rule: Reject the null hypothesis if p-value below 0.1 and F-statistics is greater than 3

V. DATA ANALYSIS AND DISCUSSION

1. *Co-integration Test*

Johansen cointegration technique was used to determine the long run relationship between the variables since all the variables are integrated to the same order I (1). The main aim behind this analysis is to prove and predict the existence of co-integration and the co-movement (long-run relationship) between the variables in the series that is under consideration.

Table 1: Co-integration Test Results

| Unrestricted Cointegration Rank Test (Trace) | | | | |
|---|------------|-----------|----------------|---------|
| Hypotheses | | Trace | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.700257 | 107.0674 | 69.81889 | 0.0000 |
| At most 1 * | 0.518276 | 62.48876 | 47.85613 | 0.0012 |
| At most 2 * | 0.391929 | 35.46453 | 29.79707 | 0.0100 |
| At most 3 * | 0.271080 | 17.05840 | 15.49471 | 0.0289 |
| At most 4 * | 0.134845 | 5.359320 | 3.841466 | 0.0206 |
| Source: Authors' Computation, 2021 | | | | |
| Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized | | Max-Eigen | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.700257 | 44.57866 | 33.87687 | 0.0018 |
| At most 1 | 0.518276 | 27.02422 | 27.58434 | 0.0588 |
| At most 2 | 0.391929 | 18.40613 | 21.13162 | 0.1154 |
| At most 3 | 0.271080 | 11.69908 | 14.26460 | 0.1225 |
| At most 4 * | 0.134845 | 5.359320 | 3.841466 | 0.0206 |
| Source: Authors' Computation, 2021 | | | | |

Table 1 shows the Unrestricted cointegration test result (Trace and Maximum Eigenvalue). The Johansen co-integration trace test result indicated 5 co-integrating equations at the 0.05 percent significance level between the variables. This denotes the rejection of the null hypothesis at 0.05% level. While the Maximum Eigen value test indicated 1 co-integrating equation at 0.05% level. Both tests result suggests that there exists a long-run relationship between the variables.

II. Ordinary Least Square Result

Table 2 present the Ordinary Least Square Regression result of the relationship between monetary policy variables (EXG, MPR, MS and TBR) and Inflation (INF) – the dependent Variable.

Table 2: OLS Regression Result

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|-------------|-------------------------|-------------|----------|
| LEXG | -1.168367 | 4.746643 | 0.246146 | 0.0070 |
| LMPR | 3.675857 | 17.53425 | 0.209639 | 0.0352 |
| LM2 | 3.677137 | 3.628475 | -1.013411 | 0.0180 |
| LTBR | 8.946385 | 11.79662 | 0.758385 | 0.0534 |
| C | 8.597838 | 33.85307 | 0.253975 | 0.0010 |
| R-squared | 0.713635 | Mean dependent var | | 19.96030 |
| Adjusted R-squared | 0.621122 | S.D. dependent var | | 18.03008 |
| S.E. of regression | 16.90293 | Akaike info criterion | | 8.612060 |
| Sum squared resid | 9714.108 | Schwarz criterion | | 8.825337 |
| Log likelihood | -162.9352 | Hannan-Quinn criterion. | | 8.688582 |
| F-statistic | 2.309232 | Durbin-Watson stat | | 1.680904 |
| Prob(F-statistic) | 0.000868 | | | |
| Source: Authors' Computation, 2021 | | | | |

Table 2 shows the OLS regression results. The R² of 0.13635 which indicates 71 percent of total variation in the dependent variable can be explained by the explanatory variables. The adjusted R² of 0.6211 or 62 percent showed that the explanatory variables were robust in explaining the variation in inflation within the period. The Durbin-Watson statistic of 1.6809 which is close to 2.0 indicates no presence of autocorrelation in the data. Nonetheless, the F- statistic has a value of 2.309 with probability value of 0.000868 which means, it is statistically significant at 5% and the model is a good fit. Therefore, the explanatory variables have a joint significant impact in determining the movement in inflation rate in Nigeria within the period 1981- 2019.

The estimated coefficient of exchange rate (-1.168367) is rightly signed. It is negative and statistically significant. This is true for an import dependent country like Nigeria. This by implication means that a 1 percent depreciation in Naira exchange rate will increase inflation by 1.17 percent. This is in conformity with economic theory and the result obtained in the scholastic works [1][2]. The estimated coefficient of monetary policy rate (3.675857) is rightly signed (positive) and statistically significant. A 1 (one) percent increase in monetary policy rate will increase inflation by 3.68 percent under investigation. The coefficient of money supply (3.677) is positive as expected and statistically significant. A 1 (one) percent increase in money supply will increase inflation by 3.68 percent. The estimated coefficient of treasury bill rate (8.946385) is rightly signed (positive) and statistically significant. A 1 (one) percent increase in treasury bill rate will

increase inflation by 8.95 percent. Therefore, relationship existed between inflation and monetary policy rate in Nigeria during the period

III. Granger-Causality Test

Table 3 shows the result of the Granger causality relationship between INF and the selected monetary policy variables. The decision rule is that we reject the null hypothesis if the p-value is less than 0.05 and the F-statistics is greater than 3.

Table 3: Granger Causality Test Result

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|----------------------------------|-----|-------------|--------|
| LM2 does not Granger Cause LINF | 37 | 2.20237 | 0.1270 |
| LINF does not Granger Cause LM2 | | 3.58098 | 0.0395 |
| LMPR does not Granger Cause LINF | 37 | 0.32980 | 0.7215 |
| LINF does not Granger Cause LMPR | | 2.54293 | 0.0944 |
| LTBR does not Granger Cause LINF | 37 | 0.25803 | 0.7742 |
| LINF does not Granger Cause LTBR | | 3.01446 | 0.0632 |
| LEXG does not Granger Cause LINF | 37 | 1.06804 | 0.3556 |
| LINF does not Granger Cause LEXG | | 0.23848 | 0.7892 |
| LMPR does not Granger Cause LM2 | 37 | 2.34546 | 0.1121 |
| LM2 does not Granger Cause LMPR | | 0.55260 | 0.5808 |
| LTBR does not Granger Cause LM2 | 37 | 0.65570 | 0.5259 |
| LM2 does not Granger Cause LTBR | | 0.14809 | 0.8629 |
| LEXG does not Granger Cause LM2 | 37 | 2.84767 | 0.0727 |

| | | | |
|---|----|---------|--------|
| LM2 does not Granger Cause LEXG | | 0.77930 | 0.4672 |
| LTBR does not Granger Cause LMPR | 37 | 4.57056 | 0.0179 |
| LMPR does not Granger Cause LTBR | | 0.67831 | 0.5146 |
| LEXG does not Granger Cause LMPR | 37 | 0.76432 | 0.4740 |
| LMPR does not Granger Cause LEXG | | 6.96264 | 0.0031 |
| LEXG does not Granger Cause LTBR | 37 | 0.50019 | 0.6111 |
| LTBR does not Granger Cause LEXG | | 5.61083 | 0.0082 |
| Source: Authors' Computation, 2021 | | | |

Table 3 shows the result of the Granger causality analysis. The result shows that we reject the null hypothesis of LINF does not Granger Cause LM2, LTBR does not Granger Cause LMPR, LMPR does not Granger Cause LEXG and LTBR does not Granger Cause LEXG at 5% level of significance while the opposite cannot be rejected. This result indicates that there is a unidirectional causal relationship between LINF and LM2, LTBR and LMPR, LMPR and LEXG and LTBR and LEXG. The results show that changes in inflation will lead to a significant change in money supply but not viceversa. There was no case of bidirectional causality at 5% significance level.

E. Summary of Findings

The study furthermore analyzed the relationship between monetary policy rate, money supply, exchange rate, treasury bills rate and inflation rate in Nigeria. The research made use of secondary data sourced from Central Bank of Nigeria (CBN) Statistical bulletin 2019 and the National Bureau of Statistics (NBS) on monetary policy rate, exchange rate, treasury bills rate, money supply and inflation. The Ordinary Least Square (OLS) and Granger Causality test techniques were employed in the data analysis.

The Johansen co-integration test revealed the existence of long-run relationship between the variables. While the empirical result of the OLS test showed that monetary policy rate, money supply and treasury bill rates exert positive influence on inflation in Nigeria. Exchange rate depreciation leads to inflationary growth. This result is consistent with the prediction of economic theory. Specifically, the study found that;

1. The Johansen co-integration trace test result indicated 5 co-integrating equations at the 0.05 percent significance level between the variables. This denotes the rejection of the null hypothesis at 0.05% level. While the Maximum Eigen value test indicated 1 co-integrating equation at 0.05% level. Both tests result suggests that there exists a long-run relationship between the variables.
2. The Johansen co-integration trace test result indicated 5 co-integrating equations at the 0.05 percent significance level between the variables. This denotes the rejection of the null hypothesis at 0.05% level. While the Maximum Eigen value test indicated 1 co-integrating equation at 0.05% level. Both tests result suggests that there exists a long-run relationship

between the variables.

2. The OLS results indicated that the estimated coefficient of exchange rate (-1.168367) is rightly signed. It is negative and statistically significant. This by implication means that a 1 percent depreciation in Naira exchange rate will increase inflation by 1.17 percent; The estimated coefficient of monetary policy rate (3.675857) is rightly signed (positive) and statistically significant. A1 percent increase in monetary policy rate will increase inflation by 3.68 percent. The coefficient of money supply (3.677) is positive as expected and statistically significant. A1 percent increase in money supply will increase inflation by 3.68 percent. The estimated coefficient of treasury bill rate (8.946385) is rightly signed (positive) and statistically significant. A1 percent increase in treasury bill rate will increase inflation by 8.95 percent. Therefore, relationship existed between inflation and monetary policy rate in Nigeria during the period.

4. The Granger causality analysis result shows that we reject the null hypothesis of LINF does not Granger Cause LM2, LTBR does not Granger Cause LMPR, LMPR does not Granger Cause LEXG and LTBR does not Granger Cause LEXG at 5% level of significance while the opposite cannot be rejected. This result indicates that there is a unidirectional causal relationship between LINF and LM2, LTBR and LMPR, LMPR and LEXG and LTBR and LEXG. The results show that changes in inflation will lead to a significant change in money supply but not vice versa. There was no case of bidirectional causality at 5% significance level.

F. Conclusion

The empirical result showed that money supply, treasury bills rate, monetary policy rate and exchange rate had influence on inflation within the period under consideration. This study has identified that the major driver of inflation is expected inflation. It is there by recommended that government should handle and manage information on crucial macroeconomic variables relating to control of inflationary pressures.

Secondly, the Central Bank should identify practical means of contracting money supply in the system and make better use of exchange rate to lessen inflation. The study discovered that annual Treasury bill rate through open market operation as proxy has not been effective in influencing inflation. Hence, schemes to make it more effective should be implemented perhaps through competitive rates.

The monetary authority should re-evaluate the effectiveness and potency of monetary policy rate as a tool to curb inflation in Nigeria during and after the study period especially now that the occurrence of COVID-19 pandemic has shown the world the need to exercise a lot of caution in formulating policies in Nigeria and globally. The Central Bank should assess policies before implementation particularly regarding treasury bills rate.

Finally, the Central Bank should clearly elucidate the objectives its policies and ensure appropriate control and

management of monetary policy variables.

REFERENCES

- [1] AbiolaAdeolaKumapayi, Joseph Ufuoma Nana, Bright OnoriodeOhwofasa (2012) “Impact of Inflation on Monetary Policy and Economic Development in Nigerian, 1980- 2010. Evidence from Empirical Data” *Asian Journal of Empirical Research* Vol. 2, No. 2, pp. 28-39
- [2] G. Ahiabor(2013). The Effects of Monetary Policy on Inflation in Ghana. *Developing Country Studies*, 3(12),82-89.
- [3] A.Asuquo, (2012). Inflation accounting and control through monetary policy measures in Nigeria: Multi-regression analysis (1973-2010). *IOSR Journal of Business and Management*, 1(2),53-62.
- [4] F.Adodo, O.Akindutire, & J.Ogunyemi, (2018). MONETARY POLICY AND CONTROL OF INFLATION IN NIGERIA. *International Journal of Management, IT & Engineering*, 8(12),154-170.
- [5] O.F. Anowor, & G.C. Okorie(2016). A reassessment of the impact of monetarypolicy on economic growth: Study of Nigeria. *International Journal of Developing and Emerging Economies*, 4(1),82-90
- [6] H.A.Ajie and S.G. Nenbee (2010). Monetary Policy and Stock Prices in Nigeria, 1980- 2008: An Econometric Analysis. *The International Journal Series on Tropical Issues*, 11(2):183-194,July.
- [7] A.A. Alchian, and B. Klein (1973) “On a Correct Measure of Inflation”, *Journalof Money, Credit and Banking* 5(1),173-191.
- [8] D. Asteriousand S.G. Hall, (2007). *Applied Econometrics: A Modern Approach*, London: Palgrave andMacmillan
- [9] C. Brooks (2008). *Introductory Econometrics for Finance* (2nd), New York: Cambridge UniversityPress
- [10] A.Bakare(2011).Anempiricalstudyofthedeterminantsofmoneys upplygrowthandits effects on inflation rate in Nigeria. *Journal Of Research In International Business And Management*, 1(5),124-129.
- [11] G. E. Bassey& E. B. Essien (2014). Inflation Targeting framework for Monetary Policy in Nigeria: Issues, Problems and Prospects. *Journal of Economics and Sustainable Development (JESD)* Vol. 5, No. 8, pp. 88 –101
- [12] M.F. Bryan, S.G. Cecchetti and G. O’Sullivan (2002) “Asset Prices in theMeasurement of Inflation”. NBER working paper, 8700
- [13] C. O. Chinaemerem&L. E. Akujuobi(2012). Inflation Targeting and Monetary Policy Instruments: Evidence from Nigeria and Ghana. *Arabian Journal of Business and Management Review*.Vol. 1, No.11, pp. 52 – 81
- [14] O. P.Chimobi and U. C. Uche (2010). Money, Price and Output: A Causality Test for Nigeria. *American Journal of Scientific Research*, 8,78-87.