

MONETARY POLICY AS AN INSTRUMENT FOR ECONOMIC STABILIZATION IN NIGERIA

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Abstract

The study examined the impact of Monetary Policy and economic stabilization and growth in Nigeria for the 1980 to 2014 employing the Multiple Linear Regression (MLR) technique. The relational values of Monetary Policy variables such Money Supply, Exchange Rate, Interest Rate, Commercial Bank Credit, Gross Domestic Product and Consumer Price Index were evaluated. The study established that Monetary Policy does not significantly influence the price levels and growth changes in the economy. It observed that the traditional lending banks do lending to the sector of the economy that capable of engendering growth such the Manufacturing and Agricultural sector. In view of the foregoing, the study recommends that Government should through its monetary authority evolve a policy mix that will guarantee liberal Interest Rate for the industry, while pursuing the expansion of its Agricultural Credit Guarantee policies scheme tenaciously. There is also the need for the government to find away to mitigate the continuous erosion in the value of the Naira, especially as most of the intermediate products and raw-materials used in industrial sector are imported. The study also highlights the need to evolve an appropriate policy to discourage the government (state and otherwise) from sourcing for funds from the money market.

Keywords: *Stabilization, Growth, Monetary Policy*

Background to the Study

In macro- economics, we learned that every developing economy has five main goals to achieve which includes: Economic Growth, Unemployment, Price Stability, Balance of payment Equilibrium and Inflation. However, Government adapts various policies so as to attain these goals in other to achieve a better economic stabilization. Some of such policies include the fiscal policy which involves the changing of government's expenditures and taxes, the Income Policy which includes the controlling of wages, prices and profits and the Monetary Policy which involves the changing of supply of money and the rate of interest.

More so, from the brief summary above, my focus is however on the ways Monetary Policies can be an instrument of economic stabilization. We can depict from various studies carried out that Monetary Policy deals with supply of money therefore, looking at the important attainable goals in an economy, Monetary Policy basically has to deal with Price Stability. Price Stability is attained when there is no inflation that is, no rise in the general level of price and this can be measured by the Consumer Price Index. We must also take into consideration that inflation brings about economic meltdown and instability as it encourages higher price expectations, higher exchange rate and so on for a country therefore, it has to be controlled.

However, we should note that inflation is a sustained rise in the average level of prices, the higher the price level, the lower the real value also known as purchasing power of money. Boyes and Melvin (1991), unexpectedly high inflation redistributes income away from those who receive fixed dollar payments toward those who make fixed dollar payments. Hyper-inflation is a very high rate of inflation that often results in the introduction of a new currency. Finally, there are basically two(2) types of inflation which are the demand-pull inflation(increases in total spending that are not offset by increases in the supply of goods and services cause the average level of prices to rise) and the Cost-push inflation(increases in production costs cause firms to raise prices to avoid losses. This particular type of inflation is sometimes attributed to profit-push or wage-push pressures.

Realizing the intense need for the control of inflation in the economy, the government put up various specific measures which include the monetary policy and fiscal policy. The fiscal policy is the government's plan for spending and taxation. It is also a means of achieving price stability. We also find out that interest-rate is normally quoted in nominal terms. Although the real interest rate has to take into account the inflation rate because the inflation rate reduces the earnings on liquid assets in the money market. This study will allow us take note of certain things like when inflation rate is excessive and getting close to nominal interest rate, the money market will become depressed because the real interest rate will be too lower close to zero and hence unable to mobilize deposits and investments in money market instruments thereby causing dangerous effects on capital flight as returns on money market instruments become lower at home than abroad.

On the other hand, Economic Stability is an absence of excessive fluctuations in the macro economy that is, an economy with constant growth in output and low or non-excessive rise in price is said to be economically stable. The major tools of monetary policy include the use of open market operation, fixing the cash and liquidity reserve ratios, specification of credit guidelines to favor priority sectors, employing moral suasion and incentives for compliance, buying and selling foreign currency in order to influence the exchange rate, underwriting government securities such as treasury bills in the sense that the Central Bank takes over the unsubscribed portion of the securities and certificates permanently or temporarily, Manipulating the Minimum Rediscount Rate or Central Bank lending rate and last but not the least, guaranteeing of loans and sourcing of soft loans for preferred sectors.

In recent years, monetary policy has started to establish itself as a potent and highly valued counter-cyclical stabilization weapon in developing economies. Moreover, the major obstacle to its effectiveness in less-developed countries include chronic inflation rate caused by exogenous factors, bank fraud and other financial malpractices that the weak Central Bank is in under-developed countries could not check, large informal sectors that operate outside the formal banking system and are not captured by Central Bank operations, political instability, exchange rate instability due to exogenous forces, and the related capital flight syndrome that is the fate of most under-developed economies. This study aimed at evaluating the impact of Monetary Policy on economic stabilization and growth in from the period 1980 to 2014.

Literature Review

Conceptual Review

Adhikary (2009), Chudi-Oji (2013) and Nwankwo (2012) defines , Monetary policy as the control of money supply, interest rates, exchange rates and other instruments available to the Central Bank as the agent of monetary policy, with a view to influencing the economy in a desired manner. Monetary policy as a technique of economic management to bring about Sustainable economic growth and development has been the pursuit of nations and formal articulation of how money affects economic aggregates dates back the time of Adams Smith and later championed by the monetary economists. Since the expositions of the role of monetary policy in influencing macroeconomic objectives like economic growth, price stability, equilibrium in balance of payments and host of other objectives, monetary authorities have been saddled with using monetary policy to grow their economies. Monetary policy is essentially a program of action undertaken by the monetary authorities generally the central bank, to control and regulate the supply of money with the public and the flow of credit with a view to achieving predetermined macroeconomic goals (Hameed, Mughal and Rahim (2012).

Faridi (2012) describes monetary policy as a combination of measures designed to regulate the value, supply and cost of money in an economy, in consonance with the expected level of economic activity.

According to A. G. Hart, Monetary policy is “a policy which influences the public stock of money substitute of public demand for such assets of both that is policy which influences public liquidity position”. According to Monetary Theory, Monetary Policy manipulates the money supply and rate of interest in such a way to

achieve the goals of the manifestation of the ruling party (Samson and Shiro: 2012). In Nigeria, monetary policy has been used since the Central bank of Nigeria was saddled the responsibility of formulating and implementing monetary policy by Central bank Act of 1958. This role has facilitated the emergence of active money market where treasury bills, a financial instrument used for open market operations and raising debt for government has grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market.

The primary goal of monetary policy in Nigeria has been the maintenance of domestic price and exchange rate stability since it is critical for the attainment of sustainable economic growth and external sector viability (Sanusi: 2002). Monetary Policy provides a logical relationship between its variables stipulated to affects the outcomes regarding the Central Bank applies these tools to regulate the money creation, targeting the rate of interest to manage the pace of monetary circulation. The objective is to stabilize internal and external value of the currency (Wikipedia: 2011). Monetary theory provides insight on how to craft optimal monetary policy, could be expansionary or conctactionary policy.

Expansionary Policy

This is traditionally used to try to combat unemployment in a recession by lowering interest rates in the hope that easy credit will entice business into expanding. This increases the total supply of money in the economy more rapid than the usual.

Contactory Policy

This is intended to slow inflation in order to avoid the resulting distortions and deterioration of asset value. It expands the money supply more slowly than the usual or even shrinks it.

Monetary Policy Transmission Mechanism

There are different transmission channels through which monetary policy affects economic activities and these channels of transmissions have been broadly examined under the monetarist and Keynesian schools of thought. The monetarist postulates that change in the money supply leads directly to a change in the real magnitude of money. Describing this transmission mechanism, (Friedman and Schwartz. 1963) say an expansive open market operations by the Central Bank, increases stock of money, which also leads to an increase in Commercial Bank reserves and ability to create credit and hence increase money supply through the multiplier effect. In order to reduce the quantity of money in their portfolios, the bank and non-bank organizations purchase securities with characteristics of the type sold by the Central Bank, thus stimulating activities in the real sector. This view is supported by (Tobin, 1978) who examines transmission effect in terms of assets portfolio choice in that monetary policy triggers asset switching between equity, bonds, commercial paper and bank deposits. He says that tight monetary policy affects liquidity and banks ability to lend which therefore restricts loan to prime borrowers and business firms to the exclusion of mortgages and consumption spending thereby contracting effective demand and investment.

Theoretical Review

Various historical researches show that there are three (3) major views on Monetary Policy and they are: The Classical theory, the Keynesian theory and the Modern theory.

Classical Theory

Classical economists concentrated on the long run aspects of the quantity theory in which changes in the money stock result in changes only in nominal magnitudes, like the price level, but have no influence on real magnitudes like output and employment. The quantity theory of money in its modern form recognizes the important influence that changes in the money stock can have on real magnitudes in the short run, while influencing only the price level in the long run. The modern quantity theory postulates that in the short run a change in the rate of growth in money is followed with a moderate lag by changes in total spending and output, while changes in the price level follow with a somewhat longer lag.~ These changes in total spending, output, and prices are in the same direction as the change in the rate of monetary expansion. The modern quantity theory still accepts the long run postulates of its older version. A change in the rate of monetary expansion influences only nominal magnitudes in the long run, namely, total spending (GNP) and the price level. Real magnitudes, notably output and employment, are unaffected. Following the short-run responses to a change in the rate of monetary growth, total spending and the price level grow at rates determined by the rate of increase in money, while output moves toward and resumes a long-run growth path. Such growth in output is little influenced by the rate of monetary expansion. Instead, it is determined by growth in the economy's productive potential, which depends on growth of natural resources, capital stock, labor force, and productivity. An economy with frequent large recessions, a pronounced business cycle, and variable increase in level of price or frequent financial crises will be considered economically unstable.

Keynesian Theory

This view was postulated by Lord John Maynard Keynes. He held that money is an asset, like any other asset, to be held for its own sake and not just a temporary abode of purchasing power or a numeraire. This is in contrast with the earlier quantity theory which believed that money is just a veil on real economic activity; that money is not held for its own sake but temporarily for the sake of facilitating economic transactions. In other words, the Keynesians believe that money has no utility and convenience, confidence and liquidity it confers. The position of Keynes is that unemployment arises from inadequate aggregate demand which can be increased by increase in money supply which generates increase spending, increase employment and economic growth.

However, he recommends a proper blend of monetary and fiscal policies as at some occasions, monetary policy could fail to achieve its objective. The role of monetary policy which is of course influencing the volume, cost and direction of money supply was effectively conversed by (Friedman, 1968), whose position is that inflation is always and everywhere a monetary phenomenon while recognizing in the short run that increase in money supply can reduce unemployment but can also create inflation and so the monetary authorities should increase money supply with caution. He states that the money supply is not the only cause of inflation and that

changes of the money supply affect the price level not directly but through changes in the aggregate demand. Modifying the classical quantity theory of money the Keynesian believe that money supply through its transmission mechanism affects the real GDP indirectly. Monetarists while agreeing to Keynes that in the short run economy does not operate at full employment therefore expansionary monetary policy may work positively in the long-run they support classists that rising money supply will increase inflation only. Therefore they suggest that the policy must accommodate increase in real GDP without changing price level. (Bijana and RAdjenovic: 2013) Most of the modern economist is of the view that long run growth depends upon enhancement of productivity. If an appropriate monetary policy is supplemented by the external environment of suitable liquidity, interest rate, robust demand, soft assistance from the world bank of the financial institutions and debt rescheduling would lead to sustainable economic growth in the long run (Meyer,2001 and Russell,2010).

In conclusion, the Keynesians' view on monetary policy is that for money to have impact on the economy, three things must happen which are;

1. A change in money supply must influence, or lead to a change in the interest rate
2. The change in the interest rate must lead to a change in the level of investment, and
3. The change in the level of investment must have significant effect on national income.

Monetarist View

A set of ideas about how monetary policy should be conducted within an economy, Monetary theory suggests that different monetary policies can benefit nations depending on their unique set of resources and limitations. It is related to how core factors such as the size of money supply, price levels and benchmark interest rates affect the economy. It is a branch of economics that historically prefigured and remains integrally linked to macroeconomics. Economists and central banking authorities are typically those most involved with creating and executing monetary policy. It provides a framework for analyzing money in its functions as a medium of exchange, unit of account and store of value. Monetary theory seeks to explain the relationships between real variables and financial variables; more specifically, between money and economic activities.(William B. Harrison).

Modern monetary theory (MMT) also known as neo-capitalism is a descriptive economic theory that details the procedures consequences of using government-issued tokens as the unit of money that is, fiat money. This theory aims to describe and analyze modern economies in which the national currency is fiat money, established and created exclusively by the government of which money enters into circulation through government spending.

Knapp coined the term “capitalism” in his State Theory of Money, which was published in German in 1895 and translated into English in 1924. The name was derived from a Latin word Charta meaning ticket or token. He argued that “money is a creature of law” rather than a commodity. He further argued the state could create pure paper money and make it exchangeable by recognizing it as legal tender, with the criterion for the money of a state being “that which is accepted at the public pay offices”.

However, the prevailing view of money was that it had evolved from systems of barter to become a medium of exchange because it represented a durable commodity which had some use value. Modern monetarist's economists such as Randall Wray and Matthew Forstater argue that more general statements appearing to support a monetarist's view of tax-driven paper money appear in the earlier writings of many classical economists.

Alfred Mitchell-Innes, writing in 1914, argued that money existed not as a medium of exchange but as a standard of deferred payment, with government money being debt the government could reclaim by taxation.

According to Monetarists, changes in the money stock are primary determinants of changes in total spending, and should thereby be given major emphasis in economic stabilization programs, have been of growing interest in recent years. From the mid-1930's to the mid-1960's monetary policy received little emphasis in economic stabilization policy. Presumed failure of monetary policy during the early years of the Great Depression, along with the development and general acceptance of Keynesian economics, resulted in a main emphasis on fiscal actions Federal Government spending and taxing programs in economic stabilization plans. Monetary policy, insofar as it received any attention, was generally expressed in terms of market rates of interest. Growing recognition of the importance of money and other monetary aggregates in the determination of spending, output, and prices has been fostered by the apparent failure of stabilization policy to curb the inflation of the last half of the 1960's. Sharply rising market interest rates were interpreted to indicate significant monetary restraint, while the Revenue and Expenditure Control Act of 1968 was considered a major move toward fiscal restraint.

Despite these policy developments, total spending continued to rise rapidly until late 1969, and the rate of inflation accelerated. Those holding to the monetarist view were not surprised by this lack of success in curbing excessive growth in total spending, largely because the money stock grew at a historically rapid rate during the four years ending in late 1968. Economic developments from 1965 through 1969 were in general agreement with the expectations of the Monetarist view.

The general monetarist view is that the rate of monetary expansion is the main determinant of total spending, commonly measured by gross national product (GNP) - changes in total spending, in turn, influence movements in output, employment, and the general price level. A basic premise of this analysis is that the economy is basically stable and not necessarily subject to recurring periods of severe recession and inflation. Major business cycle movements that have occurred in the past are attributed primarily to large swings in the rate of growth in the money stock. This view regarding aggregate economic relationships differs from prevailing views which consider aggressive policy actions necessary to promote stability.

Monetarists generally hold that fiscal actions, in the absence of accommodative monetary actions, exert little net influence on total spending and therefore have little influence on output and the price level. Government spending unaccompanied by accommodative monetary expansion, that is, financed by taxes or borrowing from the public, results in a crowding-out of private expenditures with little, if any, net increase in total spending. A change in the money stock, on the other hand,

exerts a strong independent influence on total spending. Monetarists conclude that actions of monetary authorities which result in changes in the money stock should be the main tool of economic stabilization. Since the economy is considered to be basically stable, and since most major business cycle movements in the past have resulted from inappropriate movements in the money stock, control of the rate of monetary expansion is the means by which economic instability can be minimized.

The theoretical heritage of the monetarist position is the quantity theory of money. This theory dates back to the classical economists (particularly David Ricardo) in the early 1800's. The quantity theory in its simplest form is characterized as a relationship between the stocks of money.

Empirical Review

Plethora of work has been conducted on the implication of monetary policy on economic growth stability. Ogbolu and Lezaasi (2012) employed Johansen maximum likelihood co-integration procedure to show that there is a long run relationship between economic growth, degree of openness, government expenditure and M2.

Oztrkler (2006) examines the relationship between financial innovations and monetary control and concludes that in a changing financial structure, Central Banks cannot realize efficient monetary policy without setting new procedures and instruments in the long-run, because profit seeking financial institutions change or create new instruments in order to evade regulations or respond to the economic conditions in the economy.

Busari et-al (2002) also stated that monetary policy stabilizes the economy better under a flexible exchange rate system than a fixed exchange rate system and it stimulates growth better under a flexible rate regime but is accompanied by severe depreciation, which could destabilize the economy meaning that monetary policy would better stabilize the economy if it is used to target inflation directly than be used to directly stimulate growth. They advised that other policy measures and instruments are needed to complement monetary policy in macroeconomic stabilization.

In the same stride, Batini (2004) stress that in the 1980s and 1990s monetary policy was often constrained by fiscal indiscipline. Monetary policies financed large fiscal deficit which averaged 5.6 percent of annual GDP and though the situation moderated in the later part of the 1990s it was short lived as Batini, described the monetary policy subsequently as too loose which resulted to poor inflation and exchange rates record.

Uwabanmwun and Gabriel (2012) investigate how monetary policy objective of controlling inflation rate and intervention in the financing of fiscal deficits affect the variability of inflation and real exchange rate. The analysis is done using a rational expectation framework that incorporates the fiscal role of exchange rate. This research reflects that the effort of the monetary authority to influence the finance of government fiscal deficit through the determination of the inflation-tax rate affects both the rate of inflation and the real exchange rate, thereby causing volatility in their rates.

Moreover, it was recommended that monetary policy should facilitate a favorable investment condition through appropriate interest rates, exchange rate and liquidity management mechanism and the money market should provide more financial instruments that satisfy the requirement of the ever-growing sophistication of operators.

Analytical Framework and Methodology

Analytical Framework

The analytical framework of this study is based on the Classical Monetary theory. Classicalists, David Hume, Adam Smith, David Ricardo and John Stuart Mill and neo-classicalists, Leon Walras, Alfred Marshall and Arthur C. Pigou economists all employed the Quantity Theory of Money (QTM) to explain economic stabilization in terms of price stability (inflation) and output growth stability (Kibritcioglu, 2002). In its transactions version, the QTM states that the value of output of an economy must necessarily equal the value of all purchases.

$$M V = P Q \dots\dots\dots 1$$

Where M is money supply, V is the velocity of money, P is the general price level, and Q represents the real volume of Output. In this framework, aggregate supply in the goods market is given while aggregate demand is defined as follows:

$$AS = T \dots\dots\dots 2$$

$$AD = (M \cdot V) / P \dots\dots\dots 3$$

Now, Q may be interpreted to represent real output which is determined according to the production function in the long run. Equilibrium in the goods market requires here that AS = AD, and hence,

$$Q = (M \cdot V) / P \dots\dots\dots 4$$

If one assumes, following the classical economists, that V and T are constant in the short run, the transactions equation in (4) can be rewritten to yield a price equation for the economy as follows:

$$P = (V / T) \cdot M \dots\dots\dots 5$$

Equation (5) states simply that doubling the money supply doubles ceteris paribus the price level. That is, the general price level is solely an increasing function of money supply, or in other words, an excess supply in the money market causes, other things being equal, an excess demand in the goods market. The relative version of the equation (5) can simply be interpreted as the inflation equation of the QTM:

$$\frac{\dot{P}}{P} = \frac{\dot{V}}{V} + \frac{\dot{M}}{M} - \frac{\dot{T}}{T} \dots\dots\dots 6$$

Where \dot{P} , \dot{V} , \dot{g} and \dot{m} represent the percentage changes in P, V, T, and M, respectively, while v and g are assumed to be zero, In its extreme interpretation, this simple classical or neoclassical relationship states that inflation is only a monetary phenomenon if one ignores the possible changes in V and T. Therefore, in a classical or neoclassical economy, the money supply should be reduced to fight against inflation or price stability.

Methodology

The methodology adopted in this study is the Multiple Linear Regression (MLR) technique. The data used in the study are annual time series (secondary) data of Money Supply (M2), Interest Rate, Exchange Rate, Gross Domestic Product, Consumer Price Index and Aggregate Credit to the Economy. These data were sourced from the CBN Statistical Bulletin, 2010. The logarithmic versions of the variable data were employed for the analysis. In addition, the stationary (Unit root) profiles of the relevant research variable data were evaluated using the Augmented Dickey-Fuller (ADF) criterion. The ADF equation is presented below:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_1 \Delta Y_{t-1} + U_t \dots \dots \dots 7$$

Equation '7' is random walk model with drift and trend. Y is the variable of interest; in this circumstance they are Money Supply (M2), Interest Rate, Exchange Rate, Gross Domestic Product, Consumer Price Index and Aggregate Credit to the economy.

Specification of Model

Model I

$$\ln GDP_t = f(\ln MS_t, \ln INTR_t, \ln EXCH_t, \ln CBAC_t) + U_t \dots \dots \dots 8$$

$$\ln GDP_t = \beta_0 + \beta_1 \ln MS_t + \beta_2 \ln INTR_t + \beta_3 \ln EXCH_t + \beta_4 \ln CBAC_t + U_t \dots \dots \dots 9$$

$\beta_0 > 0; \beta_1 > 0; \beta_2 < 0; \beta_3 < 0; \beta_4 > 0;$

- $\ln GDP_t$ = Current Gross Domestic Product
- $\ln MS_t$ = Current Money Supply (Broad Money, M2)
- $\ln INTR_t$ = Current Commercial Bank Lending Rate
- $\ln EXCH_t$ = Current Naira-Dollar Exchange Rate
- $\ln CBAC_t$ = Current Commercial Bank Credit to the Economy
- U_t = Current error term
- \ln = Natural Log-growth

Model II

$$\ln CPI_t = f(\ln MS_t, \ln INTR_t, \ln EXCH_t, \ln CBAC_t) + U_t \dots \dots \dots 10$$

$$\ln CPI_t = \beta_0 + \beta_1 \ln MS_t + \beta_2 \ln INTR_t + \beta_3 \ln EXCH_t + \beta_4 \ln CBAC_t + U_t \dots \dots \dots 11$$

$\beta_0 > 0; \beta_1 > 0; \beta_2 > 0; \beta_3 < 0; \beta_4 > 0;$

- $\ln CPI_t$ = Current Consumer Price Index
- $\ln MS_t$ = Current Money Supply (Broad Money, M2)
- $\ln INTR_t$ = Current Commercial Bank Lending Rate
- $\ln EXCH_t$ = Current Naira-Dollar Exchange Rate
- $\ln CBAC_t$ = Current Commercial Bank Credit to the Economy
- U_t = Current error term
- \ln = Natural Log-growth

The parameter estimates and other elementary regressions (α_s , R, R², F², S.E., t-ratio, F-ratio, probability values and DW) were computed using the Ordinary Least Square (OLS) regression technique. The parameter estimates were appraised on A-priori Theoretical Expectation, while their statistical significance were evaluated using the probability values (p-Vs)..

Empirical Results

This chapter seeks to investigate implication of monetary policy as instrument on economic stabilization in Nigeria using the Multiple Linear Regression technique. The stationary profiles of research data were evaluated using the Unit root Augmented Dickey Fuller (ADF) test. The outcome analysis are presented and interpreted below.

Descriptive Analysis

Table 4.1: Descriptive Statistics

	CBAC	CPI	EXCH	GDP	INTR	MS
Mean	2365.245	4432.854	66.35164	10780510	17.18229	3050701.
Median	272.9000	2863.300	21.89000	4032300.	17.59000	429731.3
Maximum	18147.00	15988.00	162.0000	56260040	29.80000	16833200
Minimum	6.380000	41.60000	0.550000	94325.02	7.500000	14397.40
Std. Dev.	4094.253	4841.250	64.07029	14790937	5.221420	5170742.
Skewness	2.118960	0.849140	0.266587	1.522231	0.111443	1.723751
Kurtosis	7.511039	2.420050	1.268036	4.393180	2.964614	4.431590
Jarque-Bera	55.86793	4.696558	4.789129	16.34748	0.074274	20.32147
Probability	0.000000	0.095533	0.091212	0.000282	0.963544	0.000039
Sum	82783.58	155149.9	2322.308	3.77E+08	601.3800	1.07E+08
Sum Sq. Dev.	5.70E+08	7.97E+08	139570.1	7.44E+15	926.9498	9.09E+14
Observations	35	35	35	35	35	35

Note: CABAC (Commercial Bank Credit); CPI (Consumer Price Index); EXCH (Exchange Rate); GDP (Gross Domestic Product) INTR (Interest Rate) and MS (Money Supply)

Trend Analysis

To proceed with the test, graph of each series is first visually examined to see whether a trend is present or not as shown in figures A to F below.

Figure A: Real GDP

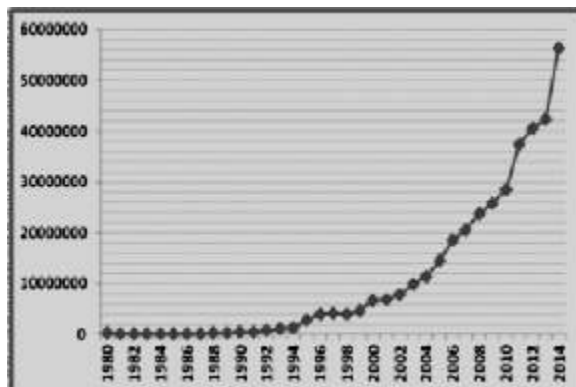


Figure B: Money Supply (M2)

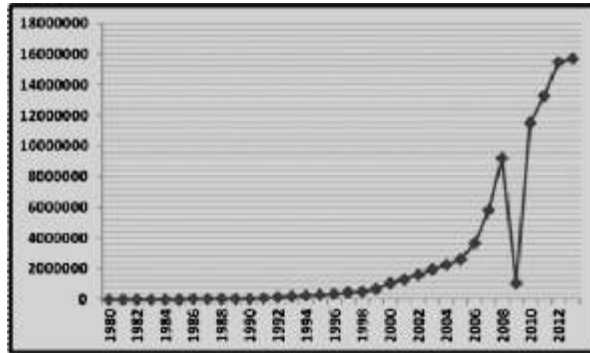


Figure C: Lending Rate

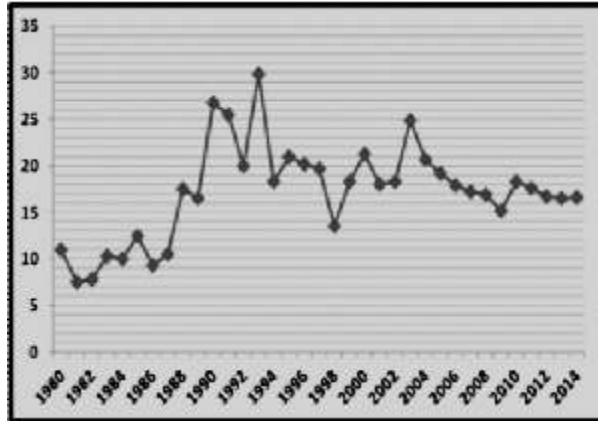


Figure D: Exchange Rate

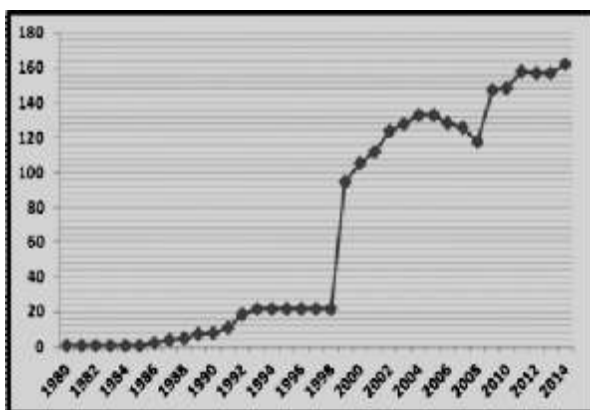


Figure E: Commercial Bank Lending Rate

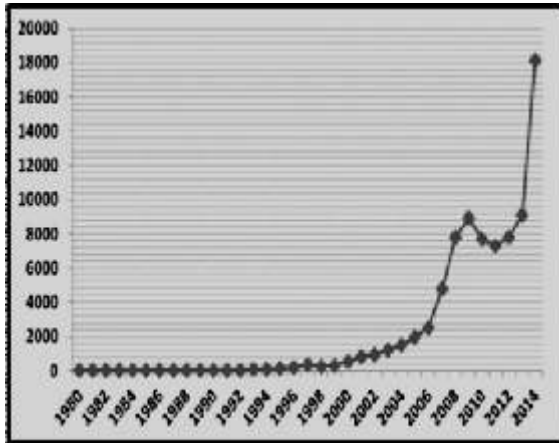
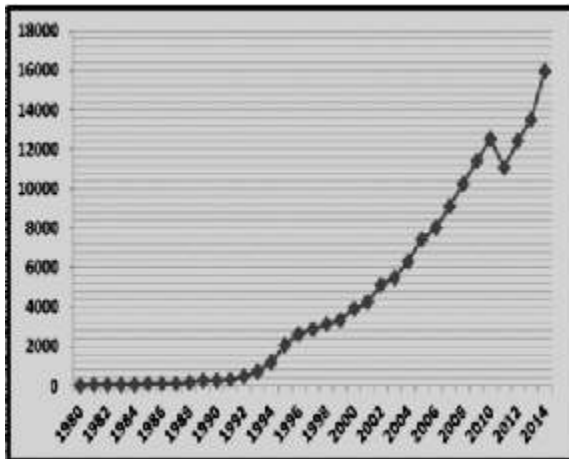


Figure F: Consumer Price Index



Source: Data for Figures A-F were sourced from CBN and NBS Reports.

Augmented Dickey-Fuller (Unit Root) Test

The augmented Dickey Fuller (ADF) test of unit roots was conducted for all the time, which was used in the study. The ADF results showed that all the variables (Real GDP, Money Supply, Commercial Bank Credit, Exchange Rate, Interest Rate, Lending Rate and Consumer Price Index) integrated at Order One (1) respectively as presented in table 4.1 below.

Table 4.1: ADF Result Outcome

Variable	Order of integration	(Tau)	MacKinnon	Critical Values
	1	** -4.956534		
LCPI	1	** -3.249038	-3.646342	1%
LMS	1	** -4.664631	-2.954021	5%
			-2.615817	10%
LGDP	1	** -8.235346		
EXCH	1	** -4.871349		
INTR	1	** -8.444993		

Significant at 1% level of significance

Estimate of Empirical relation

Table 4.2: Model 1

Dependent Variable: ?LGDP
 Method: Least Squares
 Date: 06/24/15 Time: 12:28
 Sample (adjusted): 1982 2014
 Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.133159	0.047713	2.790816	0.0095
△ LMS	0.013134	0.050186	0.261716	0.7955
△ LINTR	0.127993	0.126694	1.010258	0.3213
△ LEXCH	0.044966	0.092399	0.486650	0.6304
△ LBAC	0.121910	0.123242	0.989198	0.3313
△ LGDP(-1)	0.121519	0.110147	1.103239	0.2797
R-squared	0.130968	Mean dependent var		0.193666
Adjusted R-squared	-0.029964	S.D. dependent var		0.156779
S.E. of regression	0.159111	Akaike info criterion		-0.675468
Sum squared resid	0.683537	Schwarz criterion		-0.403376
Log likelihood	17.14523	Hannan-Quinn criter.		-0.583918
F-statistic	0.813811	Durbin-Watson stat		1.939694
Prob(F-statistic)	0.550291			

In Table 4

In Table 4.2, shows the results of the Gross Domestic Product (GDP) function. From the result is observed that all the coefficients of the explanatory variables (Money Supply, Interest Rate, Exchange Rate and Commercial Bank Credit) are positive,

thus indicating that they have increasing relational value with Real GDP. However, by evaluating the statistical significance of the coefficients of the variables, it was observed that they are statistically insignificant as indicated by their high probability values (p-Vs). This result implies that the interplay of Money Supply, Interest Rate, Exchange Rate and Commercial Bank Credit does not impact on Gross Domestic Product in the Nigerian economy.

Coefficient of Determination, $R^2=0.1334$ indicates that approximately 13% variation the growth of GDP is jointly explained by the growth of Money Supply and Commercial Bank Credit to the economy, Interest Rate and Exchange Rate: thus a significant 875% was unexplained. The result indicates that the GDP function is a poor fit: growth in Money Supply and Commercial Bank credit, change in Interest Rate and Exchange Rate do not lead to growth in Gross Domestic Product in Nigeria. Durbin-Watson statistic (2.167608) shows that autocorrelation of error term does not exist in the GDP function [DW=1.939694⁻²], there by indicating the robustness of the analysis.

Table 4.3: Model II

Dependent Variable: DLOG(CPI)

Method: Least Squares

Date: 06/24/15 Time: 12:30

Sample (adjusted): 1982 2014

Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.069539	0.049715	1.398765	0.1733
DLOG(MS)	0.014290	0.044670	0.319914	0.7515
DLOG(INTR)	-0.001107	0.113355	-0.009768	0.9923
DLOG(EXCH)	0.004712	0.082354	0.057212	0.9548
DLOG(CBAC)	0.071168	0.108898	0.653529	0.5189
DLOG(CPI(- 1))	0.479966	0.169764	2.827257	0.0087
R-squared	0.257214	Mean dependent var		0.173938
Adjusted R-squared	0.119661	S.D. dependent var		0.150877
S.E. of regression	0.141563	Akaike info criterion		-0.909182
Sum squared resid	0.541080	Schwarz criterion		-0.637089
Log likelihood	21.00150	Hannan-Quinn criter.		-0.817631
F-statistic	1.869929	Durbin-Watson stat		1.804641
Prob(F-statistic)	0.132915			

Table 4.3 presents the result of CPI function. From the result is observed that all the coefficients Money Supply, Exchange Rate and Commercial Bank Credit came up positive thus indication that they have increasing relationship with Consumer Price Index. However, the coefficient of Interest Rate came up negative thus suggesting negative relational value with CPI.

By evaluating the statistical significance of the coefficient also, it was observed that the coefficients of the entire variable are statistical insignificant as indicated by their high probability values. The result suggests that movement in Money Supply, Exchange Rate, Interest Rate and Commercial Bank Credit do not induce movement in the aggregate price level. However, the statistical significance of the one-period lag of CPI shows that movement in the aggregate price is dependent on its past value, that an appreciation in Naira exchange rate leads to a fall in the aggregate prices.

Coefficient of Determination, $R^2=0.257$ indicates that about 26% variation the growth of CPI is simultaneously explained by the growth of Money Supply Commercial Bank Credit to the economy, Interest Rate and Exchange Rate: thus a 64% variation in the growth of the CPI is not explained by the system. The result therefore suggests that the Aggregate Price function is a poor fit: growth in Money Supply and Commercial Bank credit, change in Interest Rate and Exchange Rate do not lead to growth in Consumer Price Index in Nigeria. Durbin-Watson statistic (1.785054) shows that autocorrelation of error term does not exist in the GDP function [DW=1.804641~2]. This indicates that the analysis is robust.

Summary, Conclusion and Recommendations

The study evaluated the Implication of Monetary Policy instruments on economic stabilization in Nigeria: stabilization in the study is conceived as Price Stability and growth stability of the economy for the 1980 to 2014. The study established a positive relation between the growths of GDP and Money Supply on one hand, and on the other growths of CPI and Money Supply. This outcome supports the monetarist view in using monetary instrument for the management of growth and stability in the economy. The empirical result however, suggests that growths in Money supply and Commercial Bank Credit to the economy, and Interest Rate and Exchange rate do not have significant influence on the growths in GDP and CPI respectively.

Conclusions

In conclusion, Monetary policy measures of the government, which predominantly conducted through the Open Market has been effectively used for stabilizing the economy in term of price and growth stability in Nigeria. The inability of the monetary authority to channel liquidity to the productive sectors such as Agricultural Sector, Manufacturing Sector among others through the Interest Rate mechanism has been responsible for the poor performance of Monetary policy as tool for credit control in Nigeria as evident in the result of analysis. The commercial bank, which is the dispensing unit for liquidity into the economy through loan framework frowns at lending to both the Agricultural Sector due to attendant high risk in agricultural production. Again, it does not lend significant to the Manufacturing sector due to long period of gestation. Ironically, it is the Agricultural and Manufacturing sectors that are capable of engendering significant growth in an economy through input-output linkage effects and output effect respectively.

Outside Agriculture and Manufacturing investments, the result of analysis is justified, with the lending rates at double-digits well above 20%, it is an investor's nightmare to borrow, and hence domestic investment is discouraged. The reason for the high Interest Rate is not farfetched. With the largest proportion of bills traded

in the money market being government (federal and state) bills; the result is that funds which could have been borrowed for private investment are quickly scooped by the government at a more attractive price, thereby leaving the interest rate high and rising. Ironically, in Nigeria governments are not known to thrive in the investment arena and so the funds raised in the money market are misappropriated. Investment growth in Nigeria therefore remains insignificant.

Recommendations

Based on the above allusions therefore, it recommended that the Federal Government through CBN should design a more short run oriented policy in credit operation in the economy. The policy lag should be properly managed and the transmission mechanism variables be also well maintained. A high lending and unfavourable exchange rate parity may mar the objective of monetary policy especially in the short run when adjustment is sluggish. The Government also, through its monetary authority should evolve a policy mix that will guarantee liberal Interest Rate, which is an incentive for investment and a catalyst to growth stability in an economy. Specifically the government should pursue its Agricultural Credit policies with tenacity so that adequate fund can be extended to the sector. Its Agricultural Credit Guarantee Scheme Fund should be maintained and expanded.

Importantly, the government should evolve an appropriate policy to discourage the government (state and otherwise) from sourcing for funds from the money market. This is because the constant saturation of the money market by government sales of treasury bills leaves the economy with no funds for investment purposes. De-emphasis of government borrowing from the money market will mean the availability of quantum of funds for supply by the lending institutions, which will lower the Rate of Interest and thus attracts investment expansion.

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Presentation of Data

Year	Gross Domestic Product	Money Supply	Commercial Bank Lending Rate	Exchange Rate	Commercial Bank Credit to the Economy	Consumer Price Index
1980	261225.20	14397.40	11.00000	0.550000	6.38.00	41.60000
1981	94325.02	15548.10	7.500000	0.610000	8.58	51.40000
1982	101011.23	16894.00	7.750000	0.670000	10.28	55.10000
1983	110064.03	19368.90	10.25000	0.720000	11.09	67.90000
1984	116272.18	21600.50	10.00000	0.760000	11.50	94.80000
1985	134603.32	23818.60	12.50000	0.890000	12.17	100.0000
1986	134603.32	24592.70	9.250000	2.020000	15.70	105.4000
1987	193126.20	29994.60	10.50000	4.020000	17.53	116.1000
1988	263294.46	42780.30	17.50000	4.540000	19.56	181.2000
1989	382261.49	46222.90	16.50000	7.140000	22.01	272.7000
1990	472648.75	64902.70	26.80000	7.950000	26.00	293.2000
1991	545672.41	86152.50	25.50000	11.05000	31.31	330.9000
1992	875342.52	129085.5	20.01000	18.44000	42.74	478.4000
1993	1089679.72	198479.2	29.80000	21.89000	65.67	751.9000
1994	1399703.22	266944.9	18.32000	21.89000	94.18	1180.700
1995	2907358.18	318763.5	21.00000	21.89000	144.57	2040.400
1996	4032300.34	370333.5	20.18000	21.89000	169.44	2638.100
1997	4189249.77	429731.3	19.74000	21.89000	385.55	2863.300
1998	3989450.28	525637.8	13.54000	21.89000	272.90	3149.200
1999	4679212.05	699733.7	18.29000	94.88000	322.76	3357.600
2000	6713574.84	1036080.	21.32000	105.3300	508.30	3923.800
2001	6895198.33	1316869.	17.98000	111.8500	796.16	4268.100
2002	7795758.35	1599495.	18.29000	123.7200	954.63	5151.500
2003	9913518.19	1985192.	24.85000	127.7700	1210.03	5493.300
2004	11411066.91	2263588.	20.71000	132.8000	1519.24	6318.400
2005	14610881.45	2628455.	19.18000	132.8700	1976.71	7446.400
2006	18564594.73	3674642.	17.95000	128.3800	2524.30	8059.600
2007	20657317.70	5809827.	17.26000	125.8300	4813.49	9102.300
2008	23842170.70	9208463.	16.94000	117.7772	7799.40	10254.60
2009	25774219.50	1078627.	15.14000	147.2718	8912.14	11406.20
2010	28557311.30	11525530	18.36000	148.3085	7706.43	12557.80
2011	37409900.00	13297500	17.59000	158.2300	7312.73	11080.00
2012	40544100.00	15483200	16.69000	157.3200	7800.9	12440.00
2013	42396800.00	15688900	16.54000	157.2700	9112.2	13490.00
2014	56260040.00	16833200	16.65000	162.0000	18147.0	15988.00

Source: Central Bank of Nigeria, Statistical Bulletin, Various Issues; National Bureau of Statistics, National Account of Nigeria, Various Issues