



The Empirical Analysis of the Impact of Monetary Policy on Economic Growth in Nigeria

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Abstract

This study examines the impact of monetary policy on economic growth in Nigeria with emphasis on money supply, open market operations, cash reserve and interest rate as independent variables and real GDP growth as dependent variable. The study was necessitated by the controversy ranging on the impact of monetary policy on Nigeria's economic growth. Econometric tools and techniques used to analyze the secondary data generated for the study include, the unit root test, cointegration test, t – test, f – test & R^2 . The variables show stationarity at first difference and long run relationship. Thus, necessitated the employment of ECM in the study to address the problem of stationarity and co – integration among the variables. The results of the study shows that interest rate significantly and negatively impact on economic growth, money supply significantly and positively impact on economic growth; while open market operation and cash reserves negatively impact on economic growth but not significant in the study. The f – test however indicates that the overall data employed for the study are statistically significant. Collectively the independent variables account for 66% of the behaviour of economic growth, while stochastic errors account for the reminder. While the study indicates that the ECM is correctly signed and significant, it also shows that short run dynamics adjust to long run equilibrium at a speed of 90 percent. Recommendations were however made to address the problems revealed in the study. Among such recommendations include, the need for authorities to implement a moderate interest rate policy that would not discourage investment and stifle economic growth in the country; the need for monetary authorities to make efforts to boost money supply in the economy as a measure to boost aggregate demand and production in the economy, among others.

Keywords: Monetary Policy, Economic Growth, Empirical Evaluation, Nigeria

Introduction

The monetary authority of a country uses its monetary policy framework to manage the value, cost and supply of money. In Nigeria, the main goal of monetary policy is to realize macroeconomic objectives and steer the economy towards a desired direction (Central Bank of Nigeria, 2022). Economic growth is expected to usher in the long term sustainability leading to the stability of the value of the Nigerian Naira, discourage capital flight, achieve a favourable balance of payments, increase aggregate savings and investment, and stimulate the production, distribution and consumption of goods and services. This monetary policy objective suggests that monetary policy works through the instrumental variables to be able to achieve its macroeconomic goals. Investment which is a key driver of economic growth and development is understandingly the result of the application of appropriate monetary policy tools to steer it towards such direction (Ezeibekwe, 2020; Okoroafor, 2020).

Traditionally, it has been argued that a country's approach to monetary policy is determined by its economic outlook and direction, as well as the performance of key macroeconomic indicators. Monetary policy is always available as a tool to addressing the problem of inflation and excessive prices, disinflation and recession (Williamson, 2022). In addition to the above, unemployment can as well be tackled using monetary policy measures through a loose monetary policy approach to increase money supply in the economy. While

monetary policy can be employed to stimulate the performance of macroeconomic variables, such performance directly or indirectly impacts on economic growth and development of a nation.

Economic growth connotes a sustained increase in a country's national income (Jhingan, 2017). A rise in the gross domestic product could be as a result of the interplay of monetary instruments, could depicts a growth in the economy. Conversely, economic development refers to the structural and purposeful conversion of all the economic indicators from a low to a high level (Siyan, 2020). Macroeconomic policies refer to the deliberate or conscious effort by the government to coordinate the economy towards enhancing growth and equitable income distribution (Olanrewaju, 2015). Of the policies mentioned above, monetary policy which is our focus is a major tool to achieve macroeconomic objectives (CBN,2022). According to Onuorah and Chigbu (2019), monetary policy deals with the ultimate macroeconomic objectives of the government. The effort to implement monetary policy in Nigeria is in two phases (Okoroafor, 2020), that is before 1986 and after 1986. In the first phase (i.e.1970-1985), emphases were laid on direct control tools, while the second phase (1986-date) reflected the use of market mechanisms. The economic environment before 1986 favoured the public sector and the regulatory regime in the economy. The policy managers used direct tools to stabilize price and balance of payment position, (Ojo, 2018). Meanwhile, direct tools were used mainly due to the existence of weak private sector as authorities relied on credit rationing to deepen private sector activities. According to Alexander (1995), the mid-1970 was extremely difficult to achieve monetary policy aims of improving economic growth and BOP position. Moreso, the monetary control measure adopted in this period failed to attain the desired goals. Furthermore, increases in oil revenue of the 1970s created increases in expenditure. By the 1980s, income from oil no longer sustained demand and expenditures, therefore fiscal deficits were maintained by massive borrowings from Central bank to the detriment of private sector investment (Nemedia, 2023).

The transmission mechanism of monetary policy raises an important question. How do the changes in monetary policy affect the ability of its tools to stabilize the economy and stimulate economic growth? In other words, can the monetary authorities always count on its monetary policy tools to stabilize the economy and stimulate economic growth irrespective of the prevailing rate of inflation, unemployment or economic down time? The absence of consistent monetary policies created an atmosphere of uncertainty, thus making it difficult for a sustainable economic growth to be achieved in Nigeria over the years (Ezeibekwe, 2020; Ashakah, 2023). Therefore, the link between monetary policy and economic growth is inconclusive. And, investigating whether the stabilization impact of monetary policy to promote economic growth is effective enough has become imperative as it improves our understanding of the effectiveness of monetary policy tools when the Nigerian economy is in a recession or boom. This study therefore examines the effectiveness of monetary policy in stimulating economic growth in Nigeria taking into consideration the specific roles play by money supply, interest rate, bank reserve requirement and open market operations in Nigeria's economic growth from 1995-2024.

Literature Review

Conceptual Review

Economic Growth

Economic growth refers to an economy's progress as a result of favorable circumstances, such as the progress made by the United Kingdom during the Industrial Revolution. In rich

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countries, increasing income levels is referred to as "economic growth," while in impoverished countries it is referred to as "economic development" (Maddison, 1982). According to Hicks (1987), the problems of developing countries are related to the development of unused resources even though their uses are well-known, whereas the problems of developed countries are related to growth, with the majority of their resources already known and developed to a large extent. When comparing one period of time to the next, economic growth is defined as a rise in an economy's capacity to generate products and services. It can be expressed in nominal or real terms, with the latter factoring in inflation. Although alternative metrics are sometimes employed, aggregate economic growth is traditionally quantified in terms of gross national product (GNP) or gross domestic product (GDP). The percentage change in the quantity of goods and services produced from one year to the next is the economic growth rate. It is the same as the actual GDP growth rate (Todaro and Smith, 2006).

Gordon (2020), defines economic growth as the increase or improvement in the inflation-adjusted market value of the goods and services produced by an economy in a financial year. Statisticians conventionally measure such growth as the percent rate of increase in the real and nominal gross domestic product (GDP) (Gordon, 2020). Economic growth is usually calculated in real terms, i.e., inflation-adjusted terms to eliminate the distorting effect of inflation on the prices of goods produced. Measurement of economic growth uses national income accounting since economic growth is measured as the annual percent change of gross domestic product (GDP), and economic growth-rates of countries are commonly compared using the ratio of the GDP to population (Barro, 2017).

Economists distinguish between long-run economic growth and short-run economic changes in production. Short-run variation in economic growth is termed the business cycle. Generally, economists attribute the ups and downs in the business cycle to fluctuations in aggregate demand (Ayers & Warr, 2020). In contrast, economic growth is concerned with the long-run trend in production due to structural causes such as technological growth and factor accumulation (Lucas, 2018). However, increases in productivity lower the real cost of goods as over the 20th century, the real price of many goods fell by over 90% (Gordon, 2020). Therefore, economic growth has traditionally been attributed to the accumulation of human and physical capital and the increase in productivity and creation of new goods arising from technological innovation and specialization (Pilling, 2019).

Monetary Policy

For many centuries there were only two forms of monetary policy (Friedman, 1948); altering coinage or the printing of paper money. Interest rates, while now thought of as part of policy, were not generally coordinated with the other forms of monetary policy during this time, but rather monetary policy was considered as an executive decision, and was generally implemented by the authority with seigniorage (Warner, 2012).

Monetary policy is the policy adopted by the monetary authority of a nation to regulate money supply with a view to affecting monetary and other financial conditions to accomplish broader objectives like high employment and price stability in a country (Lindsey and Wallich, 2018). Further, purposes of a monetary policy may be to contribute to economic stability or to maintain predictable exchange rates with other currencies. However, today most central banks in

developed countries conduct their monetary policy within an inflation targeting framework (Abdel-Monem, 2023).

The tools of monetary policy depends on the country's stage of development, institutional structure, tradition and political system (Abdel-Monem, 2023). Interest-rate targeting is generally the primary tool, being obtained either directly via administratively changing the central bank's own interest rates or indirectly via open market operations (Abdel-Monem, 2023). Interest rates affect general economic activity and consequently employment and inflation via a number of different channels, known collectively as the monetary transmission mechanism, and are also an important determinant of the exchange rate (Bordo, 2018). Other policy tools include communication strategies like forward guidance and in some countries the setting of reserve requirements. Monetary policy is often referred to as being either expansionary, that is lowering rates, stimulating economic activity and consequently employment and inflation; or contractionary, that is dampening economic activity, hence decreasing employment and inflation (Nelson, 2023).

Monetarist economists long contended that the money-supply growth could affect the macro-economy (Friedman, 1948). These included Milton Friedman who early in his career advocated that government budget deficits during recessions be financed in equal amount by money creation to help to stimulate aggregate demand (Bernanke, 2006). Later, Friedman (1960), advocated simply increasing the monetary supply at a low, constant rate, as the best way of maintaining low inflation and stable production growth. The inflation trend of the 1970s affected many countries, following the 1970s energy crisis in which several central banks turned to a money supply target in an attempt to reduce inflation.

In most advanced economies, the main monetary policy instrument is the short-term interest rate (Freenstra, 2025). For monetary policy frameworks operating under an exchange rate anchor, adjusting interest rates are, together with direct intervention in the foreign exchange market, an important tool to maintain the desired exchange rate (Nelson, 2025). For central banks targeting inflation directly, adjusting interest rates are crucial for the monetary transmission mechanism which ultimately affects inflation through the central bank policy rates which normally affect the interest rates that banks and other lenders charge on loans to firms and households (Nelson, 2025).

Money Supply

Money can be referred to as the sum of all the money holdings of all the members of the society. This could be either M1 or M2 in Nigeria, M1, M2 and M3 in United Kingdom (UK) or M1, M2, M3 and M4 in United States of America (USA). The M1 is a narrow measure of money supply, it focuses on the role of money as a medium of exchange and defines money as “currencies in circulation outside the banks plus demand deposits held in banks (Kevin, Roland and Sashana, 2022). Economists however differs on the effect of money supply on economic growth. While some agreed that variations in the quantity of money is the most important determinant of economic growth and that countries that denote more time to studying the behavior of aggregate money supply rarely experience much variations in the economic activities (Handler 1997).

Interest Rate

The level of interest rates and the aggregate supply of money in circulation are the two basic instruments of monetary policies which can either be achieved by controlling the growth of the money supply as argued by monetarist theorist or expanding the supply of money in circulation which in turn leads to excess demand thereby causing the interest rates to decline as argued by the Keynesian economists. These are easily achieved in developed countries where there is highly organized, economically interdependent and efficiently functioning money and credit markets.

Adebisi (2022) defines interest rate as the return or yield on equity or opportunity cost of deferring current consumption into the future. Some examples of interest rates includes saving rate, lending rate and discount rate.

The importance of interest rate is hinged on its equilibrating influence on supply and demand in the financial sector. Colander (2001) and Ojo (1993) confirmed this by saying that the channeling of savings into financial assets and the willingness of individuals to incur financial liabilities is strongly influenced by interest rates on those financial assets and liabilities. The developmental role of interest rate is possible because of the interlocking linkage existing between the financial and real sectors of economies. It is therefore through this linkage that the effect of interest rate on the financial sector is transmitted to the real sector. For instance, the lending rate which translates into the cost of capital has direct implications for investment. High lending rate discourages investment borrowing and vice versa. Savings rates, on the other hand, when high encourages savings which ultimately translates into increased availability of loanable funds. The snag here is that the high savings rate is also bound to translate into high lending rates with attendant negative consequences on investment Chizea (1993).

Bank Reserves

Bank reserve requirements are central bank regulations setting the minimum liquid assets commercial banks must hold against customer deposits (Aiyar, Calomiris and Wiedalek, 2015). These requirements ensure liquidity, manage money supply, and provide a buffer against financial crises. Lowering requirements encourages lending; raising them restricts it (Franch, Nocciola and Żochowski, 2021). Reserve requirements are also referred to as central bank regulations that set the minimum amount that a commercial bank must hold in liquid assets (Abel and Bernanke, 2005). This minimum amount, commonly referred to as the commercial bank's reserve, is generally determined by the central bank on the basis of a specified proportion of deposit liabilities of the bank. This rate is commonly referred to as the cash reserve ratio or shortened as reserve ratio (Mankiw, 2002). Though the definitions vary, the commercial bank's reserves normally consist of cash held by the bank and stored physically in the bank vault (vault cash), plus the amount of the bank's balance in that bank's account with the central bank. A bank is at liberty to hold in reserve sums above this minimum requirement, commonly referred to as excess reserves (Mankiw, 2002).

In some areas such as the Euro area and the UK, tightening of reserve requirements in the home country is found to be associated with higher lending by foreign branches (Aiyar, Calomiris and Wiedalek, 2015). For this reason, the reserve ratio is sometimes used by a country's monetary authority as a tool in monetary policy, to influence the country's money

supply by limiting or expanding the amount of lending by the banks (Franch, Nocciola and Zochowski, 2021). Monetary authorities increase the reserve requirement only after careful consideration because an abrupt change may cause liquidity problems for banks with low excess reserves; they generally prefer to use other monetary policy instruments to implement their monetary policy. In many countries reserve requirements are generally not altered frequently in implementing a country's monetary policy because of the short-term disruptive effect on financial markets; the reason why there is zero reserve requirements in some countries like the United States, Brazil, Japan etc (Abel and Bernanke, 2005).

Theoretical Literature

This study is anchored on the monetarist theory of money associated with Milton Friedman. Monetarism is an economic theory that focuses on the macroeconomic effects of the supply of money and central banking (Harvey, 2015). Formulated by Friedman (1956), the theory argues that excessive expansion of money supply is inherently inflationary, and that monetary authorities should focus solely on maintaining price stability. The monetarist theory draws its roots from the quantity theory of money, a century-old economic theory which had been put forward by various economists, among them Irving Fisher and Alfred Marshall, before Milton Friedman restated it in 1956. Friedman (1956), asserts that money supply is the primary determinant of economic growth and inflation, and argued that stable, predictable money supply growth is more effective than discretionary policy for managing economic stability.

Monetarism therefore is a school of thought in monetary economics that emphasizes the role of policy-makers in controlling the amount of money in circulation to promote economic growth and stability. The monetarist theory states that variations in the money supply have major influences on national output in the short run and on price levels over longer periods. Monetarists assert that the objectives of monetary policy are best met by targeting the growth rate of the money supply rather than by engaging in discretionary monetary policy (Friedman, 1963), and is commonly associated with neoliberalism (Harvey, 2015).

Monetarism is mainly associated with the work of Milton Friedman, who was an influential opponent of Keynesian economics, by criticizing Keynes's theory of fighting economic downturns using fiscal policy (e.g. government spending). Friedman and Anna Schwartz wrote an influential book, *A Monetary History of the United States, 1867–1960*, and argued that inflation is always and everywhere a monetary phenomenon, which partly established a basis for the monetarists argument (Dimand, 2016).

Although opposed to the existence of the Federal Reserve, Friedman advocated given its existence, a central bank policy aimed at keeping the growth of the money supply at a rate commensurate with the growth in productivity and demand for goods (Phillip, 1987). Monetarists argued that central banks sometimes caused major unexpected fluctuations in the money supply. Friedman (1956), asserted that actively trying to stabilize demand through monetary policy changes can have negative unintended consequences. The monetarists attributed inflation to excess money supply generated by a central bank. It attributed deflationary spirals to the reverse effect of a failure of a central bank to support the money supply during a liquidity crunch (Blanchard, Amighini, and Giavazzi, 2017). In particular, argued that the Great Depression of the 1930s was caused by a massive contraction of the money supply and not by

the lack of investment that Keynes had argued. They also maintained that post-war inflation was caused by an over-expansion of the money supply (Friedman and Anna, 1963).

Friedman (1956), therefore proposed a fixed monetary rule, called Friedman's k-percent rule, where the money supply would be automatically increased by a fixed percentage per year. The rate should equal the growth rate of real GDP, leaving the price level unchanged. For instance, if the economy is expected to grow at 2 percent in a given year, the Fed should allow the money supply to increase by 2 percent. Since discretionary monetary policy would be as likely to destabilise as to stabilise economic growth, Friedman (1956), advocated that the Fed be bound to fixed rules in conducting its policy.

Despite the above observations, the popularity of monetarism had picked up in political circles when the prevailing view of neo-Keynesian economics seemed unable to explain the contradictory problems of rising unemployment and inflation in response to the Nixon shock in 1971, the oil shocks of 1973 and the attempt by the British conservative government of Margaret Thatcher to implement a full market economy in 1979 (Barnett and Chauvet, 2011). On one hand, higher unemployment seemed to call for reflation, but on the other hand rising inflation seemed to call for disinflation. The social-democratic post-war consensus that had prevailed in first world countries was thus called into question by the rising neoliberal political forces (Chen and Valcarcel, 2025).

Empirical Review

Nguyen (2023), examines the impact of monetary policy on foreign direct investment using analyzed data from typical countries in Southeast Asia for the period 1997 to 2020. Using pooled ordinary least squares (OLS), fixed effects (FEM) and random effects (REM), the results confirmed that expansionary monetary policy had a negative influence on attracting foreign direct investment, while contractionary monetary policy had the effect of promoting the flow of international capital into Southeast Asian countries and recommend the further adoption of inflation fighting measures to attract more foreign investment into the economies.

Ashakah (2023), investigated the relationship between monetary policy and investment in Nigeria using the Dynamic Ordinary Least Squares (DOLS) estimation technique in data analysis. The study utilized time series data from 1981 to 2022. The data analyzed were collected on gross fixed capital formation as the dependent variable, exchange rate, interest rate, and bank credit to private sector as the independent variables. The empirical results revealed that both bank credit to private sector and interest rate had negative effects on investment in Nigeria during the period of the study as they passed the significance test at 5 percent level. The results of the study confirmed that investment is negatively related with monetary policy in Nigeria. The study recommended that

Nigerian government should make viable monetary policy capable of enhancing investment, There by reducing unemployment and poverty in the country.

Ajisafe and Folorunso (2022), examined the relative effectiveness of monetary and fiscal policy on economic activity in Nigeria between 1970 and 1998 using co-integration and error correction modeling techniques. Findings revealed that monetary rather than fiscal policy exerts a greater impact on economic activities in Nigeria and that emphasis on fiscal policy by the

government has resulted to greater distortion in the Nigerian economy. The study advocated for fiscal policy reform in Nigeria for improved impact on economic growth.

Chaudhry, Iqbal, Umar and Faheem (2021), explored the impact of monetary policy on inflation and investment in Pakistan. They employed the Autoregressive distributed lag model (ARDL) over the time of 1972 to 2019. The empirical findings showed that in the long-run, money supply had significant and positive impact on investment and other variables. Trade, foreign direct investment, gross domestic saving, services were also positively associated with investment; interest rate and exchange rate negatively linked with investment. Empirical findings of the second econometric model show that money supply has a significant and positive impact on inflation including other variables like foreign direct investment, exchange rate, exports and government expenditures. The study recommended that a stable monetary policy should be introduced to promote economic growth and development.

Methodology

Data Collection Methods and Sources

Annual country-specific time series data were utilized in this study. Price control was disaggregated into different areas where data were sourced. Specifically, data on monetary policy instruments/variables, which included money supply; cash reserve requirements; open market operations and interest rate were sourced from the National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN). On the other hand, data on economic growth proxy by real Gross Domestic Product growth rate were sourced through the National Bureau of Statistics (NBS), the World Bank and the Central Bank of Nigeria (CBN).

Model Specification

The study will adopt the co-integration analysis in estimating the determinants of economic growth in Nigeria for the period 1995- 2024. As far as the short-run adjustments are concerned, they can be integrated with the long-run equilibrium through the error correction mechanism (ECM).

The functional model in this study is:

$$RGP = f(MS, OP, IR, CR) \quad (3.1)$$

Thus, the econometrics model:

$$RGPt = \beta_0 + \beta_1 MS + \beta_2 OP_t + \beta_3 IR_t + \beta_4 CR_t + \mu_t \quad (3.2)$$

The lagged model is thus:

$$RGP_t = \alpha_0 + \sum_{i=1}^4 \alpha_i EG_{t-1} + \sum_{i=1}^4 \alpha_2 MS_{t-1} + \sum_{i=1}^4 \alpha_3 OP_{t-1} + \sum_{i=1}^4 \alpha_4 IR_{t-1} + \sum_{i=1}^4 \alpha_5 CR_{t-1} + \theta_1 EG_{t-1} + \theta_2 MS_{t-1} + \theta_3 OP_{t-1} + \theta_4 IR_{t-1} + \theta_5 CR_{t-1} + e_t \quad (3.3)$$

Where:

c = vector of intercepts or constant parameters

$\alpha_1 - \alpha_7$ = short-run coefficient of the predictor variables

$\theta_1 - \theta_7$ = the long-run multipliers.

e_t = stochastic term, which is assumed to be serially independent with zero mean and constant variance

Δ = first difference notation

P = optimal lag order to be selected automatically using SIC.

RGP = Real Gross Domestic Product Growth Rate

MS = Money Supply

OP = Open Market Operations

IR = Interest Rate

CR = Cash Reserve Requirements

Accordingly, from a priori considerations, money supply is expected to be positively related to real gdp growth, while interest rate and cash reserve requirements and open market operations are expected to be negatively related to economic growth (a priori expectation: $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 < 0$, $\beta_4 < 0$)

Analytical Technique

Econometrics analysis to be applied will involve the following processes.

1. The first step of co-integration analysis is to conduct a unit root test for each variable in the equation. The study will utilize the Augmented Dickey-Fuller (ADF) test to explore the order of integration (stationarity) of each variable. The general form of (ADF) for the unit root test is estimated by equation.

$$\Delta y_t = a_0 + a_1 y_{t-1} + \sum a \Delta y_t + \mu \dots \dots \dots 3.4$$

The general form of (ADF) for the unit root test is estimated by equation

$$\Delta y_t = a_0 + a_1 y_{t-1} + \sum a \Delta y_t + \mu \dots \dots \dots 3.5$$

While for the cointegration test, the estimation model or Johansen's method is shown in Equation

$$y_1 = A_1 Y_t \dots \dots + A_p Y_{t-p} + \beta_{xt} + \epsilon_t \dots \dots \dots 3.6$$

Error Correction Model (ECM)

The ECM is basically a system that builds on Johansen's test for co integration. Indeed the error correction model is designed to correct the long and short run disequilibrium observed among the variables used in the series. The estimation incorporates the short run coefficients and the error correction term (ECT) which measure the speed of adjustment of the model from short run towards the long run equilibrium, therefore the short run errors of the model will automatically be correcting themselves to the degree of ECT term. More so, the coefficient of ECM is expected to be negative.

The regression equation form for the ECM is represented by equation (3.10).

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^n \beta_{1i} \Delta Y_{t-i} + \sum_{i=1}^n \lambda_{1i} \Delta X_{t-i} + \phi ECM_{t-1} + U_T \dots (3.10)$$

Data Analysis and Discussion

Data Analysis

Table 1 Descriptive Trend Analysis

	(RGP)	(MS)	(OP)	(IR)	(CR)
Mean	0.563690	1.46E+08	67.14718	103.2231	44.29077
Median	1.472867	30507160	71.10000	110.9000	43.90000
Maximum	12.45747	7.67E+08	82.13000	125.2000	56.00000
Minimum	-15.45037	0.000000	0.000000	0.000000	36.20000
Std. Dev.	5.324005	2.27E+08	13.76449	25.16869	5.274552
Skewness	-0.899367	1.538739	-3.077177	-1.809649	0.519599
Kurtosis	4.734162	3.899973	15.58067	8.060299	2.452986
Jarque-Bera	10.14449	16.70633	318.7427	62.89716	2.241128
Probability	0.006268	0.000236	0.000000	0.000000	0.326096
Sum	21.98392	5.70E+09	2618.740	4025.700	1727.340
Sum Sq.					
Dev.	1077.111	1.96E+18	7199.525	24071.59	1057.194
Observations	30	30	30	30	30

Source: Eviews

The descriptive statistics gives the researcher a clue to the type of time series data used. It shows the researcher if the data is normally distributed or not. Therefore, the descriptive analysis above shows the type of time series data for the two models used. From the table 4.2.1, the researcher focused on the skewness, kurtosis and JB of the data set to determine whether they are normally distributed or not. The standard deviation however, shows how much faraway the data is from the mean. The descriptive statistics show that RGP, MS, OP, IR and CR averaged 0.56, 1.46, 67.14, 103.22 and 44.29 percent respectively. This finding indicates that Nigeria has on the average remained on the classification of low growth rate and high interest rate attributable to rising money supply. The skewness shows that some of the variables have a fairly normal distribution based on the rule of thumb of 0, while others do not as the more it is closer to 0 the better. However, the JB shows that CR, is the only normally distributed variable among all the variables used.

Unit Root Test

Table 2 Unit Root Tests

Variables	ADF	Comments
CR	(@Levels: prob= 0.1203; @First difference=0.0081)	I(1): Stationary @First difference
IR	(@Levels: prob= 0.1260; @First difference: prob= 0.0088)	I(1): Stationary @First difference
OP	(@Levels: prob= 0.3392; @First difference: prob= 0.0001)	I(1): Stationary @First difference
MS	(@Levels: prob= 1.0000; @First difference: prob=0.0000)	I(1): Stationary @First difference
RGP	(@Levels: prob= 0.0772; @First difference: prob= 0.0000)	I(1): Stationary @First difference

Source: ADF, Eviews

The ADF is used to test for the presence of random walks among the variables used. The unit root tests for the presence of stationarity. The table 4.2 shows the test results are at levels

and at first difference. The results reveal that the variables are stationary at first difference, hence the choice of the ECM model.

Cointegration Test

Table 3: Johansen Cointegration Test

Date: 04/20/26 Time: 11:55

Sample (adjusted): 1995 2024

Included observations: 25 after adjustments

Trend assumption: Linear deterministic trend

Series: RGP CR MS OP IR

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.834360	140.1143	69.81889	0.0000
At most 1 *	0.561875	75.38858	47.85613	0.0000
At most 2 *	0.496537	45.67955	29.79707	0.0004
At most 3 *	0.407124	20.97473	15.49471	0.0067
At most 4	0.058105	2.155025	3.841466	0.1421

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

In order to determine whether the variables are cointegrated or not, johansen cointegration test for cointegration were conducted on the models. Cointegration shows if there is a long-run relationship or not. As the Trace statistics of all the models show, there is cointegration. The presence of cointegrating factors necessitated for the conduct of error correction mechanisms.

4.4 Error Correction Model

Table 4.4 Error Correction Models

Dependent Variable: D(RGP)

Method: Least Squares

Date: 04/20/26 Time: 12:01

Sample (adjusted): 1995 2024

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.641214	1.510037	2.411341	0.0251
D(RGP(-1))	-0.089254	0.186245	-0.479231	0.6367
D(CR)	-0.680020	0.435481	-1.561538	0.1333
D(CR(-1))	-0.187763	0.478470	-0.392424	0.6987
D(CR(-2))	-0.114826	0.430443	-0.266762	0.7923
D(IR)	1.068380	2.687200	0.397581	0.6950

D(IR(-1))	0.582718	2.785799	0.209174	0.8363
D(IR(-2))	-0.203893	0.176985	-1.152038	0.0323
D(OP)	-0.138868	0.369716	-0.375607	0.7110
D(OP(-1))	-0.411388	0.476773	-0.862858	0.3980
D(OP(-2))	-0.277426	0.404512	0.685828	0.5003
D(MS)	1.56E-08	1.11E-08	1.396878	0.0370
D(MS(-1))	8.85E-10	1.08E-08	0.082114	0.0353
D(MS(-2))	5.56E-09	1.09E-08	0.511647	0.0142
ECM(-1)	-0.908272	0.258093	-3.519171	0.0020
R-squared	0.668128	Mean dependent var	0.236932	
Adjusted R-squared	0.446879	S.D. dependent var	4.680224	
S.E. of regression	3.480780	Akaike info criterion	5.626726	
Sum squared resid	254.4324	Schwarz criterion	6.286526	
Log likelihood	-86.28108	Hannan-Quinn criter.	5.857014	
F-statistic	3.019810	Durbin-Watson stat	2.079509	
Prob(F-statistic)	0.010950			

The results showed that the coefficient of determination is 0.67. This means that 67% of the changes in the dependent variable are explained by the changes in the independent variables. The overall model is also statistically significant at 5% level of significance. We also note that the ECM is rightly signed as it shows that the speed of adjustment is 90%. It is statistically significant at 5% level of significance.

Variables Relationships and Test of Hypotheses

H₀₁: RGP and MS

Finally, the result of the analysis shows that MS is positively related to RGP as expected in the stated apriori. The result reveals that as MS increases by a unit, RGP increases by 5.6 units and vice versa. Again, MS is statistically significant at 5% level of significance given that the sig t-value falls below the threshold of 0.05. The analysis shows that we will accept the alternative hypotheses and conclude that there is a significant relationship between MS and RGP over the period.

H₀₂: RGP and IR

The result also reveals that IR has a negative relationship with PGR. As IR increases over the period by a unit, RGP decreases by 0.2 units and vice versa. IR is statistically significant at 5% level. We would reject the null hypothesis and conclude that there is a significant relationship between IR and RGP over the period.

H₀₃: RGP and CR

The result of the analysis shows that CR is negatively related to RGP as expected apriori. The result reveals that as CR increases by a unit, RGP decreases by 0.11 units and vice versa. Again, CR is statistically insignificant at 5% level of significance using the t-value. The analysis shows that we will reject the alternative hypothesis and conclude that there is no significant relationship between CR and RGP over the period.

H₀₄: RGP and OP

The result shows that OP has a negative relationship with RGP. As OP increases over the period by a unit, RGP decreases by 0.28 units and vice versa. OP, however, is statistically

insignificant at 5% level. We would reject the alternative hypothesis, accept the null hypothesis and conclude that there is no significant relationship between OP and RGP over the period.

Discussion of Findings

The analyses have shown the extent and the impact of the relationships between the dependent and the independent variables as used in the study. The author found the relationship between real GDP growth rate and money supply to be positively and significantly related. This is in line with findings of the study conducted by Amadi, Ewubare and Georgewill (2025), which investigate the effect of monetary policy on economic growth in Nigeria from 1982 to 2022. Also, the findings also revealed that interest rate has a negative and significant relationship with real GDP. The study conducted by Nguyen (2023), which examines the impact of monetary policy on foreign direct investment in Southeast Asia supports this outcome. Again, the study found that open market operation, just like reserve requirement, has a negative and insignificant relationship with real GDP over the period. Thus, supporting the outcome of the studies conducted by Ebisine and Oki (2021), which empirically examined the effect of monetary policy on domestic private investment in Nigeria, and that of Adeagbo (2021), which examines the effect of monetary policy on economic growth in Nigeria.

Conclusion

The role monetary policy plays in the economic performance of Nigeria has been exposed by this study following the result of the study, which showed that relationship exists between the dependent and independent variables, with two of the variables (money supply and interest rate) having demonstrated their significant impact on Nigeria's economic performance. The overall results implies that monetary policy has had a long run impact on Nigeria's economic performance.

Recommendations

1. The authorities should implement a moderate interest rate policy that would not discourage investment and stifle economic growth in the country, as high rates of interest are likely to discourage borrowing for investment purposes which could generate an adverse effect on production and economic growth.
2. The monetary authorities should make efforts to boost money supply in the economy as a measure to boost aggregate demand and production in the economy. However, as money supply increases, the authority should be watchful over the prices of goods and services in order to avoid an inflationary economy.
3. Policies that attract investors to the economy should be made and implemented in order to increase production and grow the economy.
4. There should be improvement in the quality of government spending in Nigeria. Fiscal policy expansion should tend towards increasing the component of government expenditure that will lead to a sustained growth and also an improvement in the standard of living of the citizens

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