

Monetary Policy And Economic Growth: The Nigerian Experience 1980 To 2022

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Abstract

The study investigated the relationship between monetary policy and economic growth using the Nigerian experience between 1980 to 2022. The ex-post facto research design in addition to time series data was employed in the study. Variables that were used in the study are real gross domestic product per capita (GDPPC), specified to depend on monetary policy variables such as Exchange Rate, Interest rate, inflation rate, money supply, treasury bills and credit to the private sector. The Seemingly Unrelated Regression (SUR) Equations model in conjunction with the Bounds Cointegration approach was used. The results show that at a 5% level of significance, there is no significant relationship between inflation and money supply on economic growth in Nigeria within the period under study. This is because, when the money supply pushed into circulation is hoarded, the expected economic activities such monies are meant to generate to affect economic growth are stalled. On the other hand, the results show that the duo of interest rate and treasury bills had significant effect on economic growth in Nigeria during the period under study. For every unit change in RIR, GDPG grows by 0.16 units. On the contrary, a unit change in TB will result in 0.005 decreases in GFCF. The study recommends that the Central Bank of Nigeria should have a policy framework that will combine different monetary policy instruments with a focus on the reduction of interest rates to single digits. This will motivate potential investors and entrepreneurs who find it difficult to borrow from banks to finance their operations because of the high cost of borrowing.

Keywords: *Seemingly Unrelated Regression, Monetary Policy, Economic Growth.*

1. Introduction

According to Adeniyi, Omotosho, and Akanbi (2020), Nigeria's economy is characterised by macroeconomic distortions, which creates a unique setting for the deployment and efficacy of monetary policies. There is no doubt that any country's macroeconomic objectives are to achieve high, rapid, and sustainable economic growth while maintaining relative stability in domestic prices, exchange rates, a favourable balance of payments, and a high level of employment (Fasanya, Onakoya, & Agboluaje, 2013). The investigation into Nigeria's monetary policy landscape aims to boost economic growth and ensure long-term prosperity.

Economic growth is hailed as a potent weapon for improving living standards in poor countries. Rapid and sustained growth is crucial for making faster progress towards achieving the Millennium Development Goals. Economic growth, according to Victor, Iheukwumere, and Ogonda (2022), is an increase in the size of a country's economy over time. It refers to the entire value of products and services produced in an economy throughout time. It is measured in terms of GDP. While Khaysy and Gang (2017) defined monetary policy as the action of controlling the money supply and adjusting interest rates to meet macroeconomic goals.

The relationship between monetary policy and economic growth in Nigeria is a source of intense interest and controversy among policymakers, economists, and academicians. Whereas monetary policy has the potential to stimulate economic growth by influencing investment, consumption, and overall economic stability, its effectiveness in Nigeria is frequently hampered by structural issues such as a sizable informal sector, low financial inclusion, and external shocks such as global oil price fluctuations. The essence of monetary policy execution is to achieve macroeconomic objectives. However, concerns such as high inflation, a volatile exchange rate, high interest rates, which discourage entrepreneurs from borrowing for manufacturing purposes to increase economic growth, a high incidence of unemployment, and so on, continue to have a detrimental impact on Nigeria's economic growth.

It is vital to remember that Nigeria Vision 2020's overarching goal is to transform the country into a middle-income country by 2020, with a GDP growth rate of 9-10 percent (NEEDS, 2014). It's crucial to remember that this aim is still a mirage. According to the National Bureau of Statistics report, GDP increased by 2.31% (year on year) in real terms in the first quarter of 2023. This growth rate decreased from 3.11% in the first quarter of 2022 to 3.52% in the fourth quarter of 2022. Economic growth is crucial in an economy since it eliminates poverty while also improving citizens' livelihoods.

However, in this instance, we may observe negative growth or decline, which will have a detrimental impact on the population's welfare. Inflation data provided from the Central Bank of Nigeria's official website reveal that the inflation rate for all items was 33.20% in March 2024, 33.69% in April 2024, and 33.95% in May 2024 (CBN, 2024). This goes against the desired single-digit inflation rate for the economy. This means that a high rate of inflation causes hardship for the population, reducing their purchasing power and hence lowering their standard of living. In addition to most people's inability to afford to make purchases, economic activity tends to slow down when prices of goods and services rise, which impedes the expansion of the economy.

Bank lending rate is one of the main variables of monetary policy. Data indicates that the loan rate has increased recently. The range of the prime lending rate was 21.5% to 30% (CBN, 2022). It is important to remember that interest rates increase with credit risk. Due to the exorbitant interest rate, young and youthful entrepreneurs are unable to access credits to finance their businesses. Because of its influence on economic factors in every economy, monetary policy is one of the main forces behind economic growth.

The majority of governments and their agencies now prioritise monetary policy's effectiveness in affecting economic growth due to its expanding significance. There is a strikingly high degree of

agreement that monetary policy affects a country's economy, even while economists disagree about the specifics of how monetary policy functions and how much of an impact it has (Oleka, Okolie & Chukwuani, 2017). Consequently, comprehending how monetary policy affects economic growth in Nigeria necessitates a thorough examination of historical data, empirical evidence, and the contextual elements that affect how monetary policy effects spread. The purpose of this study is to investigate the complexities of this relationship by looking at how various monetary policy measures have impacted Nigeria's economic growth over time and highlighting the main obstacles and chances for improving policy effectiveness.

2. Literature Review

2.1. Conceptual Review

2.1.1. Concept of Monetary Policy

The credit-control strategies that a nation's central bank implements are referred to as monetary policy. Monetary policy is "policy employing central bank's control of the money supply as an instrument for achieving the objectives of general economic policy," according to Johnson (1962). "Any conscious action undertaken by the monetary authorities to change the quantity, availability, or cost of money" is how Shaw (1963) described it. A country's central bank uses a suite of instruments known as monetary policy to manage the total amount of money in circulation, foster economic expansion, and implement tactics like adjusting interest rates and bank reserve requirements.

2.1.2. Concept of Economic Growth

Economic growth can be defined as: positive, zero, or negative. Positive economic growth is defined as the average annual rhythms of macro-indicators being higher than the average rhythms of population growth; zero economic growth is defined as the average annual rhythms of macro-indicators, namely GDP, being equal to the population growth; and negative economic growth is defined as the average annual rhythms of population growth being higher than the macro-indicators (Yien, Abdullah & Azam, 2017). Growth in aggregate production in an economy is typically expressed as an increase in national income.

2.2. Theoretical Review

2.2.1. Classical Theory of Monetary Policy

Because of its neutral impact on the economy, money is viewed by classicalists as a shroud. It does nothing more than influence the level of prices. The money supply is directly correlated with price levels only; actual income, interest rates, and the degree of real economic activity are unaffected by increases in the money supply. Their view of monetary policy is based on the quantity theory of money and sees money primarily as a medium of exchange. According to this, the amount of money in circulation determines the price level. An algebraic expression for this relationship would be

$$MV = PT$$

Where, **M** denotes the supply of money; **V** denotes the velocity of circulation which is the average number of times a currency is spent on final goods and services over the course of a year; **P** denotes

the price level; T denotes the volume of transactions (or real total output). The above equation tells us that the total money supply MV equals the total value of output PT in the economy. Assuming V (velocity of money) and T (the total output) are held constant, a change in the supply of money (M) causes a proportional change in the price level (P).

The classical theorist held the opinion that the economy was always experiencing full employment. On the other hand, they acknowledged the possibility of unemployment in the case of money wages becoming rigidly downward. The only way to address this predicament is to implement an expansionary monetary policy. According to Nwosu and Saibu (2012), contractionary monetary policy can only result in deflation of the price level while expansionary monetary policy is effective in restoring full employment.

2.2.2. Keynesian Theory of Monetary Policy

John Maynard Keynes's economic theories provide the foundation of the Keynesian theory of monetary policy. The theory placed a strong emphasis on how aggregate demand affects employment and economic output. According to Keynesian theory, factors including the rate of interest, aggregate demand, employment level, production, and income may all be permanently altered by altering the money supply. Keynes thought that there was an equilibrium in unemployment. This suggests that a rise in the money supply may result in long-term gains in output. The money supply's final impact on the level of prices is determined by how it affects both aggregate demand and the elasticity of the supply of total output.

Keynes supported the cheap money policy when there was unemployment. Thus, an increase in the money supply initially affects the rate of interest, which generally declines. Because of the marginal efficiency of capital, investment will rise in response to a decrease in interest rates. Through the multiplier effect, the additional investment will improve effective demand, increasing income, output, and employment.

2.2.3. Monetarist Theory of Monetary Policy

Milton Friedman established the monetarist school of thought in 1963. The idea emphasises how crucial the money supply is a major driver of the economy. It highlights how crucial it is to manage economic stability by keeping the money supply under control. The Monetarist thought held that money supply is one of the main factors influencing price levels and inflation. Additionally, the theory believes that rather than being controlled and adjusted by the monetary authorities (ies), the money supply should expand at a set rate to support a consistent growth rate. A decrease in the money supply results in risks and deflation, which in turn triggers a recession. An increase in the money supply unavoidably leads to higher prices and inflation.

The monetarist theory contends that while changes in the money supply have an impact on employment and output levels as well, such effects are transient in nature compared to the longer-lasting and more substantial effects on inflation. The theory's proponents contended that money supply can be held in a variety of forms, including cash, bonds, stocks, tangible assets, and human capital, since it may be required for purposes other than anticipated transactions. Every variation of this wealth has a distinct quality of its own along with a variable yield. In the end, these

consequences will boost output and aggregate money demand (Abdulrahman, 2010). The monetarists contend that by boosting aggregate demand in the near term, expansionary monetary policies may raise the level of real GDP. Nonetheless, they contend that the quantity theory continues to provide a reasonable approximation of the relationship between the money supply, the level of prices, and the real GDP over the long term, when the economy is functioning at full employment. Furthermore, an expansionary monetary policy over the long term merely causes inflation; it does not have any effect on the actual GDP.

2.2.4. Endogenous Growth Theory

Although endogenous growth models and neo-classical models share many visual similarities, they diverge greatly in their underlying presumptions and conclusions (UN, 2011). The neoclassical theory's weaknesses were addressed by the endogenous growth theory. They do not accept the neoclassical premise of diminishing marginal productivity of capital; instead, they assume the existence of production scale effects across the economy and frequently concentrate on the influence of external factors on investment profitability. An essential precondition is the presence of positive externalities. According to endogenous growth theories, there are other potential long-term drivers of economic growth besides technical advancement.

The value of intensive, high-quality determinants of economic growth (parameter A in neoclassical theory) is defined in the theories of endogenous growth with the following factors: -

- i. The quality of human capital, which depends on investment in human development (education, health);
- ii. Creation of the necessary conditions and prerequisites for the protection of intellectual property rights in the conditions of imperfect competition;
- iii. State support for the development of science and technology;
- iv. The role of government in creating a favourable investment climate and attracting new technologies.

Consequently, endogenous growth theories support government intervention in the development process, in contrast to neoclassical views. These theories fall into two categories. The first category comprises theories wherein human capital is shown to be a significant factor influencing economic expansion. P. Romer (1989) and R. Lucas (1988) developed these theories. This group's views are characterised by their incorporation of human capital and the education component into the production function. This idea holds that technologically advancement propels economic growth, which is further guaranteed by firm competition, long-term product creation and implementation, and technological innovation.

Every innovation introduces new intermediate goods (products, technologies) to the market that can be utilised to produce things more efficiently than they were previously. For businesses engaged in research, the promise of monopoly rents if the event that inventions are successfully patented serves as their primary driving force. The expenses related to the creation and application of innovations are covered by this rent. Therefore, the emergence of an endogenous flow of

professionals between the R&D sector and the sector that produces interim goods plays a crucial role in determining the rate of economic growth.

2.3. Empirical Review

The impact of monetary policy on macroeconomic variables, particularly price stability and economic growth, has been a topic of discussion for a long time. To gain an understanding of the monetary policies' impact on Nigeria's economic growth, it is relevant to examine some empirical perspectives from scholars about this monetary influence. Using a range of economic variables, Oseni and Oyelade (2023) looked into how fiscal and monetary policies affected economic growth in Nigeria. The results demonstrated that lending interest rates, gross capital formation, total employment, and the size of the money supply all play important roles in determining Nigeria's economic growth.

The study discovered that the lending interest rate has a considerable negative impact on GDP, but gross capital formation, total number of employees, and wide money supply all positively and significantly affect GDP. Victor, Iheukwumere, and Ogonda (2022) examined how monetary policy affected Nigeria's economic expansion between 1981 and 2021. To conduct its analysis, this study employed secondary data from the Central Bank of Nigeria Statistical Bulletin (2021). The study estimated the short- and long-term effects of the monetary policy on economic growth in Nigeria using Autoregressive Distributed Lag (ARDL) bound co-integration, which revealed a long-term link. Additional estimation results indicated that Nigeria's economic growth was influenced by monetary policy.

The relationship between monetary policy and economic growth in Nigeria was investigated by Adeniyi, Omotosho, and Akanbi (2020). The study discovered that monetary policy positively impacted Nigeria's economic growth over the short and long terms. The study concluded, in particular, that economic growth was positively impacted by an increase in the money supply and negatively impacted by an increase in interest rates. The relationship between Nigeria's fiscal policies and economic growth was examined by Alabi and Olarinde (2020). The study discovered that taxes and government spending, with the former having a negative effect and the latter a favourable one, had a considerable influence on economic growth in Nigeria. The study also discovered that different sectors experienced different effects from fiscal policy on economic growth, with the service sector benefiting more from government spending than other sectors.

The relationship between Nigeria's unemployment rate and fiscal policy was examined by Ezeaku, Nwanna, and Okafor (2020) using an Autoregressive Distributed Lag (ARDL) Bounds Testing method. According to the study, taxes only had a substantial positive impact on the unemployment rate in the short term, while government spending had a considerable negative impact on it over the long term. The study additionally discovered that the effects of fiscal policy on the unemployment rate differed by industry, with government spending having a greater detrimental effect on the rate in the industrial and service sectors than in the agriculture industry. The effect of fiscal policy on economic growth in Nigeria was studied by Mogaji, Adetula, and Olaoye (2020). The relationship between taxation, spending by the government, and economic growth was examined using a Vector Autoregression (VAR) model in this study. The study's findings indicated

that although there was a positive correlation, it was not statistically significant, between government spending and economic growth. It was discovered, however, that taxes and economic growth had a statistically significant negative association. The study concludes that fiscal policy can affect Nigeria's economic growth, but to do so, decision-makers must carefully weigh the right proportion of taxation and spending.

Ogundipe and Akinbobola (2020) examined the association between monetary policy variables (money supply, interest rate, and exchange rate) and economic development using an Autoregressive Distributed Lag (ARDL) Bounds Testing technique. The empirical findings point to a strong positive correlation between the money supply and economic growth in the short term, and a strong positive association between the money supply and exchange rate and economic growth over the long term. Conversely, the research indicates that interest rates have an effect on economic growth over the short and long terms. The study concludes that, if implemented properly by policymakers, the monetary policy factors taken into consideration in the analysis can be used to foster economic growth in Nigeria.

Using an Autoregressive Distributed Lag (ARDL) technique, Umar and Murtala (2020) examined the effects of fiscal policy on economic development in Nigeria from 1981 to 2017. The results show that taxes and government spending have a big short- and long-term effects on Nigeria's economic growth. The study also shows that government expenditure has a more pronounced beneficial effect on GDP expansion as opposed to taxation. The study concludes that the Nigerian government should concentrate on using fiscal policy to boost economic growth, particularly by increasing expenditure on areas like infrastructure development that have a stronger multiplier effect on economic growth.

To highlight the relationship between monetary policy variables and their application in the economy, Oleka, Okolie, and Chukwuani (2017) set out to investigate the relevance of monetary policy in the Nigerian economy. The study's time frame is from 2000 to 2015. The nature and direction of causation between the variables and the gross domestic product (GDP) are examined in this study. This study's overarching goal is to investigate how monetary policy affects GDP to address this. The other objectives are to find out how the money supply affects GDP, how interest rates affect GDP, how much inflation affects GDP, and so on. The ex post facto design was used in the study. To assess the purpose of assessing the link, information on monetary policy, interest rates, exchange rates, money supply, inflation rate, and GDP was gathered. A pairwise Granger causality test was used to ascertain the causal link between the variables. The outcome demonstrated a causal association between the variables, ranging from inflation to interest rate. The study's overall conclusions showed a clear connection between monetary policy and economic expansion.

The dynamic relationship between monetary policy and economic growth in Malaysia from 1980 to 2015 was studied by Yien, Abdullah, and Azam (2017). It argued that size distortion and erroneous conclusions in the ADF model result from the existence of a structural break in the data-generating process. The study looked for stationarity characteristics that take structural breaks into

account. This study found no evidence of a causal relationship between money supply and price level or between inflation and output. Interest rate Granger affected growth per capita, money supply, inflation, unemployment, and foreign direct investment, according to VAR Granger Causality results.

Khaysy and Gang (2017) used annual time series data from 1989 to 2016 to investigate how monetary policy affected economic development. The results of the unit root test indicate that all variables are stationary at first difference, hence the relationship between the variables was examined using the Johansen Cointegration and Error Correction Model. The results demonstrate that only the real exchange rate has a positive sign over the long term, while the money supply, interest rate, and inflation rate all have as a negative impact on real GDP per capita. The results of the error correction model show that there is a short-term causal relationship between the money supply, real exchange rate, and real GDP per person.

Many gaps have been discovered. While a large number of researchers thought that there was a negative correlation in the same subject matter, some studies concluded that there was a positive association between monetary policies indicated by particular proxies and economic growth in Nigeria. However, the researcher felt that more research was necessary to take into account the modern realities that were somehow absent from the earlier studies because of the numerous changes that have occurred in the economic sphere recently, which are mostly related to government policies and reforms. A few of these research have employed the heterogeneity-prone cross-country regression approach.

Furthermore, even if some studies are country-specific, the economies, structures, and rates of adherence to policy instruments in those other nations differ significantly from Nigeria, as does the rate of economic development in Nigeria. Because of this heterogeneity, it is impossible to draw broad conclusions about how monetary policy affects economic growth in various nations. Furthermore, a thorough examination of numerous empirical studies revealed a consistent analytical pattern; the majority of the studies are predicated on applying Granger causality to variables related to monetary policy.

The main issue is that, unlike much of any prior research, this link cannot be adequately estimated using a two-variable equation technique since monetary policy can impact economic development in a variety of ways, both directly and indirectly. To put it another way, the two-variable single equation technique might not be strong enough to account for every element influencing economic growth as a result of monetary policy implemented by the government. Thus to close this gap, the researchers chose to concentrate on four crucial monetary policy proxies: the money supply, interest rate, exchange rate, and inflation rate. This study has chosen to close the gap in the literature that this has caused.

3. Methodology

3.1. Model Specification

In specifying our model, this study adopted the model as specified by Victor, Iheukwumere and Ogonda (2022) with some modifications. Their model is shown below:

RGDP = f(MS, INF, INT, EXR, CPSB, TB) -----equation 1

The previously stated functional relationship was adopted by changing the single linear equation into a system equation by adding Open Market Operations (OMO), which are represented by Treasury Bills (TB), credit from banking institutions to the private sector, the real exchange rate, and GDP growth and gross fixed capital formation as proxies for economic growth. The form of the system equation is a regression model that appears to be unconnected. The system of multiple regression equations known as Seemingly Unrelated Regression (SUR) Equations consists of K ($k \geq 1$) independent or exogenous variables and a single dependent variable, just like in a typical regression model. Other than the fact that their disturbances are stated to be correlated, the m equations have no connection or relationship with one another.

The model is specified as follows:

GDPG = f(REXR, INFR, RIR) equation 2

GFCF = f(MS, CPSB, TB) equation 3

Where:

Where MS = Money Supply; INF = Inflation Rate; INTR = Interest Rate; EXR = Exchange rate; CPSB = Credit to the private sector by Banks; GDPG = growth of Gross Domestic Product; GFCF = Gross fixed capital formation; and TB = Treasury bills.

The explicit form of equations 2 and 3 above is represented as:

$GDPG_t = \beta_0 + \beta_1 REXR_t + \beta_2 INFR_t + \beta_3 RIR_t + \mu_t$ ----- equation 4

$GFCF_t = \beta_0 + \beta_4 MS_t + \beta_5 CPSB_t + \beta_6 TB_t + \mu_t$ ----- equation 5

$$\begin{bmatrix} GDPG_t \\ GFCF_t \end{bmatrix} = \begin{bmatrix} REXR & INFR & RIR \\ MS & CPSB & TB \end{bmatrix} \times \begin{bmatrix} \beta_1 \\ \beta_1 \end{bmatrix} + \begin{bmatrix} \mu_t \\ \mu_t \end{bmatrix}$$

Where: $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ are coefficients and parameters of each independent or explanatory variable and μ is the Error term

3.2. Model Estimation

The models were subjected to a battery of tests which include the ADF Unit root test, Bound Test for Cointegration, Seemingly Unrelated Regression model as well as post estimation test.

4. Results and Discussion

4.1. Unit root Test (Stationary Test) Analysis

5. The stationarity test in was estimated using the Augmented Dickey fuller unit root test.

Table: ADF Unit Root @ Trend and Intercept

Variables	ADF TEST AT LEVEL	5% VALUE AT LEVEL	ADF TEST @ 1 st Diff	5% VALUE AT 1 st Diff	Decision
GDPG	-2.883625	-3.526609	-10.68610	-3.526609	I(1)
REXR	-2.044839	-3.523623	-4.398387	-3.526609	I(1)
INFR	-4.071071	-3.526609			I(0)
RIR	-7.623321	-3.523623			I(0)
GFCF	-1.785189	-3.523623	-5.511510	-3.526609	I(1)
MS	-2.913803	-3.526609	-5.174831	-3.526609	I(1)

CPSB	-4.114271	-3.526609	I(0)
TB	-3.562319	-3.526609	I(0)

Source: Compilation from E-view 9, 2024

Panel A's variables (GDPG and REXR) indicated integration at the first difference, however, INFR and RIR were determined to be stationary at levels. Panel B shows that whereas CPSB and TB stabilised at levels, GFCF and MS reached stationarity following their first differencing. A test of cointegration utilising the bound test approach became necessary based on the degree of variation in stationarity among the variables under examination.

4.2 Bounds Cointegration Test

The bound test is a useful tool for determining if variables move in tandem over time. To prevent erroneous regression results is the fundamental goal of bound tests. Tables 4.4 and 4.5 below provide the ARDL- constrained cointegration test results.

Table 4.4: ARDL Bounds Test: GDPG REXR INFR RIR

Test Statistic	Value	k
F-statistic	5.834520	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Compilation from E-view 9, 2024

The calculated F-statistic of 5.83, as demonstrated by the results, is greater than the upper and lower bound critical values of 4.35 and 3.23, respectively, at the 5% significance level, confirming the existence of a long-term link between the variables in the equation.

Table 4.5: ARDL Bounds Test: GFCF MS CPSB TB

Test Statistic	Value	K
F-statistic	4.404743	3
Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Compilation from E-view 9, 2024

The calculated F-statistic of 4.40 is bigger than the upper bound and lower bound critical values of 4.35 and 3.23, respectively, according to the result at the 5% significance level. Cconfirming, therefore, that the variables in the equation have a long-term relationship.

4.3 Seemingly Unrelated Regression

The link was calculated using seemingly unrelated regression based on the bound test result. As the dependent variable, the GDP growth rate is correlated with the real exchange rate, inflation rate, and real interest rate as independent variables. This correlation is expressed in the seemingly unrelated regression result below. The correlation between money supply, Treasury Bills, and Credit to the Private Sector from the Banking Sector as explanatory factors and Gross Fixed Capital Formation as the dependent variable is also found in the same outcome.

Table 4.6 System: SUR Analysis estimated by Least Squares

Model 1: GDPG	Coefficient	Prob.	Model 2: GFCF	Coefficient	Prob.
C(1)	6.677583	0.0000	C(5)	61.70331	0.0000
C(2)*REXR	-0.019296	0.0011	C(6)*MS	0.537299	0.4546
C(3)*INFR	-0.044551	0.2746	C(7)*CPSB	-2.754280	0.0062
C(4)*RIR	0.159841	0.0023	C(8)*TB	-0.005789	0.0022
R-squared		0.480627	R-squared		0.603915
Adjusted R- squared		0.439624	Adjusted R-squared		0.572645

Source: Compilation from E-view 9, 2024

The result emphasises the importance of monetary policy variables on economic development and growth, with a focus on the real exchange rate, inflation rate, and real interest rate as they relate to GDP growth in the Nigerian economy. According to the R2 and adjusted R2, most of the coefficients have a reasonably good fit and are statistically significant, as the results indicate. Model 1 is reasonably well-fitted, as indicated by its moderate R2 of 0.48 and Adjusted R2 of 0.43.

An estimated 48% changes in GDPG as portrayed by the R2 statistic are capable of being accounted for by changes in the monetary policy variables (REXR, INFR and RIR) within the economy. The importance of this result is that a good portion of economic growth performance can be attributed to and explained by the soundness of the monetary policy in place.

Consequently, with a probability value of less than 0.05, REXR and RIR are deemed statistically significant. Similarly, RIR is positively signed, but REXR and INFR are negatively signed. This

implies that the GDPG rises by 0.16 and falls by 0.02 and 0.04 for each unit change in RIR, REXR, and INFR, respectively. For Model 2, which is a stand-in for economic development in Nigeria, the money supply, credits to the private sector, and Treasury bills were regressed on gross fixed capital formation. Based on the R^2 and adjusted R^2 , the result indicates that the coefficients have a reasonably good fit and are statistically significant. The model is better fitted as seen by its extremely high R^2 of 0.60 and Adjusted R^2 of 0.57.

An estimated 60% changes in GFCF as portrayed by the R^2 statistic is capable of being accounted for by changes in the monetary policy variables (MS, CPSB and TB). This finding is significant because it shows that the money supply, commercial banks' credit to the private sector, and Nigeria's Treasury Bills account for a sizable amount of the country's economic growth performance. A unit increase in MS corresponds to a 0.53 unit rise in GFCF, according to the results. CPSB and TB, on the other hand, have a considerable but detrimental effect on economic growth throughout the same period. GFCF will decrease by 2.75 and 0.005, respectively, for every unit increase in CPSB and TB, according to their corresponding coefficients.

4.4 Post Estimation Tests

4.4.1 System Residual Portmanteau Tests for Autocorrelations

The coefficient of the parameters of econometric tests of significance is contained in Ttable 4.7 below.

Table 4.7: System Residual Portmanteau Tests for Autocorrelations

Null Hypothesis: no residual autocorrelations up to lag h					
Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	Df
1	18.57809	0.0010	19.03122	0.0008	4
2	23.61783	0.0027	24.32294	0.0020	8
3	27.08576	0.0075	28.05763	0.0054	12
4	31.15876	0.0128	32.55938	0.0084	16
5	33.70469	0.0282	35.44935	0.0178	20
6	35.64416	0.0594	37.71206	0.0371	24
7	35.90658	0.1450	38.02696	0.0979	28
8	36.51683	0.2668	38.78080	0.1904	32
9	40.48962	0.2788	43.83708	0.1733	36
10	44.37482	0.2924	48.93641	0.1571	40
11	47.26403	0.3408	52.85082	0.1693	44
12	47.77579	0.4820	53.56729	0.2692	48

Source: Compilation from E-views 2024

*The test is valid only for lags larger than the System lag order.

df is the degrees of freedom for the (approximate) chi-square distribution.

A portmanteau test was used to check for autocorrelation in the SUR's mistakes. Due to p-values that are below than the significance level of 0.05 (0.0008, 0.0020, 0.0054, 0.0084, 0.0178, and 0.0371), the null hypothesis that there is no autocorrelation is rejected in one to six period lags. The null hypothesis that there is no auto-correlation is accepted for period lags 7 to 12, though, because the p-value is higher than 0.05.

4.4.2 System Residual Normality Tests

Normality test based on the Jarque-Bera test statistic as contained in Table 4.5 below, the probability value of 0.17 is a reflection that the model is normally distributed.

Table 4.8: System Residual Normality Tests

Model 1	Componen t	Skewness	Chi-sq	Df	Prob.
	1	1.751526	21.47490	1	0.0000
	2	0.290214	0.589571	1	0.4426
	Joint		22.06447	2	0.0000
Model 2	Componen t	Kurtosis	Chi-sq	Df	Prob.
	1	5.780397	13.52857	1	0.0002
	2	3.071016	0.008826	1	0.9252
	Joint		13.53739	2	0.0011
Model 1 & 2	Componen t	Jarque- Bera	df	Prob.	
	1	35.00347	2	0.0000	
	2	0.598396	2	0.7414	
	Joint	35.60186	4	0.0000	

Source: Compilation from E-views 2024

5 Conclusions and Recommendations

The study suggests that monetary policy has a significant role in Nigerian economic growth, but its success is dependent on many circumstances. The study's findings show that, while changes in interest rates, exchange rates and treasury bills have a significant impact on economic growth, while the duo of inflation rate and money supply do not have significant effects on economic growth. These effects are frequently mitigated by persistent structural challenges such as inadequate infrastructure, political instability, inconsistent policy implementation such as the cashless policy of the CBN that caused so much hardship in the country, hoarding of money in circulation, just to mention a few. To improve the effectiveness of monetary policy in promoting economic growth, Nigeria must create a stable macroeconomic environment, strengthen its financial sector, and improve coordination between monetary and fiscal policies. Policy makers can improve the overall economic well-being of the nation by tackling these issues, which will also help to create a more favourable environment for sustainable economic growth. The study highlights the importance of having comprehensive and coherent policy frameworks that are flexible enough to adjust to the changing economic environment and effectively tackle the

particular challenges Nigeria faces. The study further recommended that those that are involved in making policies should apply the appropriate and sound monetary policy mix that would lead to single digit interest rates, which will in turn encourage young entrepreneurs to have access to credits to finance their businesses, stable and low rates of inflation, which will improve the standard of living of the people as they now have more value for every naira spent. Efforts should be geared to sanction anyone or a cartel involved in unwholesome practices, such as hoarding of money in circulation, which hinders monetary policy from having the desired effect on the economy. The CBN should ensure that our financial institutions are sound and resilient, implement extensive reforms in the financial sector, encourage improved monetary and fiscal policy coordination to prevent inconsistencies and and boost the effectiveness of monetary policy and the business climate through improvement of liquidity of the banks, amongst others.

References

- Abdulrahman, B.M.A. (2010). The role of monetary policy on economic activity in Sudan: An empirical investigation, 1990-2004. *Journal of Human Science*, 4(4), 12-21.
- Adeniyi,O., Omotosho, B. S. & Akanbi, T. A. (2020): Monetary policy and economic growth nexus in Nigeria: A Time Series Analysis. *Journal of Applied Economic Sciences*, 15(3), 59-68.
- Ezeaku, H. C., Nwanna, G. O. & Okafor, R. E. (2020). Fiscal policy and unemployment rate in Nigeria: An autoregressive distributed lag (ARDL) bounds testing approach. *American Journal of Economics*, 10(2), 98-108.
- Fasanya, I.O., Onakoya, A.B. & Agboluaje, O. (2013). Does monetary policy influence economic growth in Nigeria? *Asian Economic and Financial Review*, 3(5), 635-646.
- Johnson, H. G. (1962). Monetary Theory and Policy
The American Economic Review Vol. 52, No. 3 (Jun., 1962), pp. 335-384 (50 pages)
- Keynes, J.M. (1936). *The general theory of employment, interest and money*. London: Macmillan and Co.
- Khaysy, S. & Gang, S. (2017). The impact of monetary policy oneconomic development: evidence fromLao PDR. *Global Journal of Human-Social Science: Economics*, 17(2).
- Mogaji, P. B., Adetula, D. T. & Olaoye, O. A. (2020). Examining the impact of fiscal policy on Economic growth in Nigeria. *Ovidius University Annals, Economic Sciences Series*, 20(2), 407-416.
- Nasko, A.M. (2016). Impact of monetary policy on the economy of Nigeria. *Journal of Business and Finance Management Research*, 2(10), 163-179.

National Economic Empowerment Development Strategy (2014). Abuja.

Nwosa, P.I. & Saibu (2012). The monetary transmission mechanism in Nigeria: Asectoral output analysis. *International Journal of Economics and Finance*, (4)1: 204- 213

Oleka, D.C., Okolie, P.I. &Chukwuani, V.N. (2017). An Empirical investigation of the causality relationship between monetary policy and economic growth in Nigeria from -2000 to 2015.*Journal of Humanities and Social Sciences*, 2(1), 63-74.

Oseni, I. O. &Oyelade, A. O. (2023). The Effects of Monetary Policies on Economic Growth in Nigeria. *African Journal of Economic Review*, Volume 11 (3)

Victor, J. ,Iheukwumere, I. V. &Ogonda, G. O. (2022).Analysis of the Impact of Monetary Policy on the Nigerian Economic Growth: <https://ssrn.com/abstract/4142494>

Yien, L., Abdullah, H. & Azam, M. (2017). Monetary policy inclusive growth: Empirical evidence from Malaysia. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), 225-235