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ACHIEVING SUSTAINABLE NATIONAL ECONOMIC DEVELOPMENT USING GOVERNMENT MONETARY POLICY

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Abstract

The study investigated how the Nigerian government could achieve a sustainable economic growth using the tool of monetary policy. The study examined how monetary policy rate, money supply, and exchange rate could influence sustainable economic growth in Nigeria measured by GDP per capita. Secondary data from 1990 till 2022 and sourced from the CBN statistical bulletin was used for the study and was estimated using the Vector Error Correction Model. Findings revealed that all the independent variables had a short run speed of adjustment to move into the next period and impact the dependent variable positively and significantly. The study recommended that the central bank should adopt monetary easing strategies that would make the monetary policy rate (MPR) become a single digit rate. Double digit MPR constrains bank lending which also constrains economic growth.

Keywords: Monetary Policy, Exchange Rate, Money Supply, Sustainable Economic Growth, Monetary Policy Rate.

1.1 BACKGROUND TO THE STUDY

Governments in both developing and established economies utilize distinctive rules, strategies, and policies to control their economies. These policies are put in place to ensure that the economy is growing and developing at a steady pace. The monetary policy is one of the most common of these tools. One way to describe the practice of central banks and governments exercising discretionary control over the issue of money in order to achieve stated or intended economic objectives is to refer to it as monetary policy. Because of the connection between rising inflation and an expanding money supply, governments strive to keep it under control. By regulating the total amount of money accessible to the nation's consumers, companies, and banks, the macroeconomic authority or central bank promotes sustainable economic growth. Monetary policy is the set of actions aimed to govern the value, supply, and cost of money in accordance with the level of economic activity (Isibor, Alexander, Benjamin, Godswill, Adenike, Adedoyin, & Kikiyanu, 2023). It is the skill of regulating the movement of monetary and credit facilities in the pursuit of price stability and economic expansion (CBN 2016). It is a potent instrument for controlling macroeconomic factors like inflation and unemployment. Economic growth is defined as a continuous rise in the production of goods, services, and employment opportunities with the primary objective of enhancing the economic and financial well-being of the populace

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According to Langmead (2018), economic growth is defined as an increase in a country's productive capacity that is assessed by a consistent rise in real national income. Specifically, this growth is measured over time. On the other hand, sustainable economic growth refers to growth that continues over time without jeopardizing future generations' ability to enhance productive capacity because productive capacity is dependent on the availability and quality of production elements (including natural resources), maintaining their availability for future generations is essential (Penpoin, 2020). Sustainable economic growth is focused on achieving economic growth and maintaining it over a long-term period. Economists believe that growth that is supported by greater short-term public debt rather than enhanced long-term productivity is not sustainable in the long run and hence cannot be maintained. To achieve long-term economic growth, an economy's growth capacity must be improved and sustained.

According to Udeme (2020), despite the implementation of monetary policy, the economy still has not experienced economic growth which is one of the objectives for which it was implemented. The economy still suffers high rate of poverty, unemployment and unstable currency. There is disagreement among economists as to whether or not monetary policy intervention by the government will result in economic growth. As a result of this conflict, various economic ideologies emerged. Classical, Keynesian and monetarist schools of thought are the three main branches of economics. Each has a unique outlook on how monetary aggregates can affect economic growth and stability.

Given the exchange equation and full employment's hypothesis, changes in money supply have no effect on actual demand, investment, or production (Isibor, Adetiloye, Olokoyo, Adesina, Akinjare, & Udume, 2022). This is contrary to what Classicists claim, as stated by Nwoko, Ihemeje & Anumadu (2016). According to Keynesians, interest rates can rise or fall because of changes in the money supply. A decrease in interest rates will have a positive effect on total investment and raise total revenue and production. This is founded on the notion that interest rates are the most important predictors of investment in a market economy. There is an increase in total employment as a result of the investment process. According to monetarists, the money supply has the biggest impact on economic health. There is a belief that expanding the money supply and boosting output will lead to a rise in nominal demand. Increases in the money supply, according to monetarists, will lead to inflation in the long run, but will have no effect on aggregate demand, investment, or employment. Stagnant growth, unpredictable business cycles, and high economic volatility characterizes Nigeria's economy, which is primarily dependent on imported goods. Low productivity and a negative balance of payments are common side effects. By ensuring that resources are distributed and used effectively, the government has regulated and governed the economy in numerous ways to maximize the well-being of the people. The Nigerian government, like that of any other developing country, uses three different types of public policies to fulfil its income distribution and resource allocation goals. There are three main types of public policy instruments: monetary policy, fiscal policy, and income policy. It has been common practice for governments to utilize monetary policy to promote macroeconomic objectives such as employment generation, economic growth and development, balance of payments stability, and general price stability. (Nwoko, Ihemeje & Anumadu, 2016).

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Fixed and market-based monetary policy regimes in Nigeria have been separated into two distinct periods. These regimes predated and followed the events of 1986. To keep Nigeria's prices stable prior to 1986, direct monetary regulation was used; after market liberalisation, the focus moved to market mechanisms (Ufoeze, Odimgbe, Ezeabalisi & Alajekwu, 2018). Prior to 1986, inflation and price stability were maintained through the use of direct monetary procedures such as credit limits, interest and exchange rate administration, credit limits, cash reserve restrictions, and special deposits. Interest rates were kept to a minimum in order to encourage new investment and job creation. Special deposits were enforced in rare situations to reduce surplus reserves as well as the banks' capacity to lend. While the Nigerian government faces these challenges, its monetary authority maintains control over the economy through monetary policy.

The Central Bank of Nigeria (CBN) uses monetary policy to manage the present ups and downs of the economy (Udeme, 2020). High inflation, underemployment, imbalances in the balance of payments, low investments, and a volatile foreign currency rate continue to be problems for Nigeria's economy, all of which have been connected to a fall in economic growth. As a result, further research into the link between Nigeria's monetary policy and economic growth is urgently needed. Economic growth and development can only be linked to good monetary policy execution, but the deterioration in the economy can only be attributed to things that aren't monetary policy-related. This article will investigate the relationship between monetary policy (Exchange Rate, Money Supply, Monetary Policy Rate) and sustainable economic growth in Nigeria in order to provide appropriate solutions to these questions (GDP per capita).

Many research on the relationship between monetary policy and economic growth, including (Udeme, 2020), (Nwoko, Ihemeje, and Anumadu, 2016), (Ufoeze, Odimgbe, Ezeabalisi, & Alajekwu, 2018), and others, have found substantial evidence that monetary policy changes affect actual economic indicators.There is a wide range of different monetary policy regimes in Nigeria conducted by the CBN, depending on whether expansionary or contractionary measures are needed (i.e. money supply expansion or contraction).

Prior research has found that, despite monetary policy measures, the outcomes have not been entirely positive or sustainable as evidenced by a relatively high unemployment rate, growing poverty rates, a low standard of living, and rising inflation rates. The goal of monetary policy coordination should be to improve public welfare while maintaining long-term macroeconomic stability (Cross, 2020). Given the current state of these macroeconomic vices, it is clear that monetary policy implementation has failed to adequately solve Nigeria's economic growth issue. A lack of long-term economic growth concepts or recommendations has been found in earlier research. The debate continues over whether or not Nigeria's poor growth rate or pattern is due to weak monetary policy formulation and implementation. To yet, no definitive answer has been provided on whether or not the Nigerian economy will be better off as a result of recent changes in monetary policy. This research's goal is to fill up the knowledge gaps identified earlier.

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2.1 Concept of Monetary Policy

Monetary policy is one of the two basic ways in which government authorities can influence the overall pace and direction of economic activity, total output, employment and the general rate at which prices increase and decrease in a market economy (the other being fiscal policy). When it comes to controlling money supply in an economy, one of the most important tools is the monetary policy. Because most governments believe that the expansion of the money supply affects inflation, governments endeavor to restrict the quantity of money. Thus, monetary policy is defined as the government's efforts to influence the monetary sector's behavior. (Ufoeze, Odimgbe, Ezeabalisi & Alajekwu, 2018). It's a series of measures aimed at protecting the value and supply of money by controlling the degree of economic activity (Ihemeje & Anumadu, 2016).

Macroeconomic goals and objectives are achieved through maintaining and managing the amount (money supply) and value of a currency. Policymakers, economic experts and other players have devised distinct monetary policies as a result of the currency's role in socio-economic life. The monetary policy process includes setting targets, adopting tools, and establishing operational and intermediate targets. The macroeconomic policy aims to increase employment, price stability, and economic expansion. A variety of monetary policy instruments, including statutory reserve rates, re-discount operations, and open market operations, are used by monetary authorities to control the stock of money in a country and the interest rate. Monetary policy is an important part of the management of macroeconomic variables in an open economy, and its influence on the economy serves to facilitate economic stability and progress (Chisom, 2021).

Central banks utilize a variety of monetary policy instruments to achieve economic stability, and these vary from country to country depending on political systems, economic structures, legislative and institutional procedures, and the evolution of money and capital markets, among other factors.

2.1.2 Concept of Economic Growth

Economic growth is defined as the continual rise in the standard of living for the country's citizens through increasing the supply of commodities, services, and job opportunities. A consistent rise in real national income is a measure of economic growth. Langmead (2017) It is an increase in the country's productive capacity. It is widely accepted that economic development is a prerequisite for achieving better social welfare outcomes, which is the primary goal of economic policy. Due to this, it is critical to long-term development. Economic growth can be gauged by examining a country's Gross Domestic Product per capita (GDP). As a result, this research establishes the monetary value of all goods and services produced in an economy over a specific time period, often a year.

2.1.3 Monetary Policy Transmission Channels

Monetary policy is critical for achieving and maintaining low inflation and strong economic growth while also promoting global financial stability. Through a variety of transmission

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routes, central bank policy rate changes affect money supply, growth, and inflation, resulting in changes in employment. In contemporary emerging economies, it is commonly believed that monetary policy can influence the real economy through at least four important transmission channels.

The following are the transmission channels:

i) Interest rates channel: Based on the views of Mohan (2016), the interest rate channel works by reducing investment in response to a rise in the real cost of borrowing and raising investment in response to a fall in the real cost of borrowing. An expansionary monetary policy, for example, aims to lower the cost of creating money, resulting in increased investment and consumer demand, which should be reflected in aggregate production and prices.

ii) Asset Prices Channel: Ebson and Ikhide (2017) discovered that changes in the policy rate have an effect on the valuations of assets such as stocks, bonds, and real estate. A rise in interest rates results in a drop in stock prices, the market value of businesses, investment, and aggregate demand. As interest rates rise, the current value of future stock and bond yields as well as real estate returns decrease. The decrease in asset values has an effect on household expenditure, aggregate demand, and employment (wealth).

iii) Exchange Rate Channel: In many emerging economies, particularly those with fairly rudimentary markets for bonds, stocks, and real estate, the currency exchange rate is the most major asset price influenced by monetary policy (Mohan, 2016). When interest rates rise, the return on domestic financial assets denominated in the local currency significantly beats the return on international assets. As a result, reasonable investors sell foreign money and acquire domestic currency, causing the home currency to appreciate. A rise in the domestic currency's value would raise export prices while lowering import prices. As a result, imports will increase, while exports and consumer spending would decrease.

iv) Credit Channel: When the policy rate is increased by the central bank, the total amount of credit that is accessible to banks, as well as the total amount of credit that is available to businesses and individuals, is reduced. As a result of lower investment and consumption. Two subcategories that come under the category of this credit channel are the balance sheet channel and the bank lending channel. Companies' expected earnings decline when interest rates rise, and the real value of their debt rises, weakening their balance sheets. Businesses will find it challenging to finance their investments with external money due to the greater risk premium. As interest rates rise, banks may be concerned about borrowers' ability to repay loans through the bank lending channel due to information asymmetry. This makes loan screening stricter. All of these factors point to a drop in bank lending, investment, and consumer expenditure.

2.1.4 Monetary Policy and Economic Growth

Monetary policy is a critical component of any economy's ability to grow steadily, and it is what allows economies like Nigeria's to thrive. Monetary policy is a set of policies aimed at controlling the value, supply, and cost of money in a specific country at a given level of economic activity. Most countries' monetary policy goals, including the Nigerian economy's,

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are esteem strength, support for Balance of Payments harmony, work development, and yield growth. The objective of monetary policy is to maintain a stable level of the money supply so as to forestall the occurrence of any unfavorable effects on the economy.Inflation, poor economic growth, unemployment or unresolved balance of payments disequilibrium are just a few of the vexing instances (Adupo, 2017).

The stance of monetary policy can either be expansionary or restrictive depending on the circumstances. It is anticipated that an expansionary monetary policy will increase the rate of money supply, leading to an increase in credit availability and a reduction in interest rates. This will result in a boost to overall interest growth. When total interest in the furthest reaches of the economy to make work and things is low, an expansionary monetary policy is more justifiable. On the other hand, if the amount of money is lowered or limited, money pay will climb steadily, causing consumers to spend less and making resources for adventure more difficult to obtain, reducing all-out speculation (restrictive monetary Policy) (Imoisi, Olatunji, &Ekpenyong, 2017). According to Anyanwu (2011), a large supply of money in the economy will result in excessive interest for work and items, causing a rise in costs and affecting the Balance of Payment position. The state of the monetary business areas and institutions would inspire genuine confidence, to the point that the monetary basis of the economy could meet the needs of market participants (Nkoro,2016). Monetary policy is defined by Akomolafe, Danladi, Babalola, &Abah (2015) as a tool that is used to control the flow of money and credit in an economy for the purpose of attaining a specific macroeconomic policy objective through the application of various monetary instruments. Money supply and credit conditions are being consciously controlled by the monetary authorities (Central Bank), as demonstrated by Onouorah, Shaib, Oyathelemi, and Friday (2016). Self-sufficiency, full employment, sustainable economic progress, and equilibrium are among the macroeconomic goals.

2.1.5 An Appraisal of the Performance of Monetary Policy in Nigeria

Direct monetary policy instruments have long been criticized for their weaknesses, but it bears repeating them here. Nigera's ability to implement efficient monetary policy has been limited despite the increasing liberalisation of the financial sector and the beginning of the shift to market-based instruments of monetary management, including the absence of budgetary discipline until 1995. (Adupo, 2017). The Central Bank's lack of economic tool autonomy, quick policy changes, and widespread financial distress made post-SAP monetary policy inefficient. Nigeria's monetary policy has been tight since the SAP began to curb demand pressure on domestic prices and the foreign exchange market. A market-based approach could help solve monetary instability and financial instability. In addition, the growth target for monetary and credit aggregates was significantly exceeded, resulting in a double-digit increase in inflation and increasing pressure on the exchange rate. Self-regulation, on the other hand, has almost little effect. Another element impeding the effectiveness of monetary policy is the level of liquidity outside the commercial band system. The monetary authorities do not have a gauge of that liquidity other than volume. As a result, monetary policy is unable to target such large amounts of liquidity, and the overall economy suffers as a result.

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It consists of five key components:

1) Declare an open commitment to a medium-term inflation target
2) The institutional commitment to price stability as the primary goal of monetary policy, with all other goals being secondary.
3) Multiple factors and financial aggregates in the exchange rate are used to determine the setting of the approach instrument in this information selective system.
4) Increase policy strategy transparency by communicating with the general public and the business sector on the financial powers' structures, aims, and choices.
5) In the instance of the central bank's accountability and transparency in achieving its goals. With the CBN as the fiscal power, business banks are a big or essential actor in money-related approaches. The primary purpose of money-related approaches is to regulate expansion and maintain a stable parity of payment position for the country in order to protect the national currency's external value and advance a suitable and sustainable level of financial development and growth.

Up until June 1986, direct monetary control measures, which were popular in the 1960s and 1970s, were restricted. The instrument has a substantial impact on Nigeria's economy. As a result, during the 1980s, the allowed aggregate credit expansion ceiling was on the decline, reflecting the banking system's strategy of limiting liquidity growth. Not only was direct monetary control employed to regulate total credit expansion, but it was also utilized to determine:

1) Lid on interest rate
2) The proportion of bank loans to small-scale indigenous enterprises
3) Cash deposit for imports
4) Merchant bank asset portfolio etc.

With the implementation of indirect monetary management, the Nigerian economy has seen a surge in commercial bank cash reserve ratio in 1989 and 1990, as well as the mopping up of excess liquidity through the issuing of stabilization securities (which has been discontinued since March 1993).

The maximum liquidity ratio for commercial banks was increased from 25% to 30% in 1987, and this was maintained until 1999, severely reducing the ability of banks to extend credit. The CBN Act of 1958, as well as its later amendments, gave Nigeria its monetary policy experience. The bank's action provided inspiration for its short- and long-term monetary policy goals, with the short- to medium-term goals complementing the Federal Government's budget goals (Fakeye, 2017).

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According to the CBN Act of 1958, the bank's goals are:

1) Issuance of legal tender currency in Nigeria
2) Maintaining external reserves to safeguard the international values of the legal value currency
3) Promoting monetary stability and a sound financial system in Nigeria
4) Acting as banker and financial adviser to the government

The major goals have evolved over time to include maintaining a single digit inflation rate, maintaining exchange rate stability, fostering a stable financial system, generating high levels of output and employment, and improving the economy's overall efficiency. The CBN used both direct and indirect policy measures and instruments to achieve its monetary policy goals. Direct measures include imposing interest rate and credit expansion ceilings on banks, enforcing sectional credit expansion allocation, administrating interest rate structure level determination, and other qualitative control measures. Required cash ratio, market-based interest rate policy minimum rediscount rate, liquidity rate, open market operation, and moral suasion are examples of indirect approaches. The era of direct monetary control lasted until 1992. Since 1993, however, the CBN has transitioned to a market-based instrument, in accordance with the global trend toward a market-based framework for monetary policy.

2.2 The Keynesian Theory

This theory is propounded by Keynes in 1960.According to Keynesian economists, the interest rate is at the crux of monetary policy. A rise in the money supply generates a fall in interest rates in the Keynesian transmission component, allowing the general population to keep more money.

As a result, a lower interest rate may revitalize the business. Due to the increasing speculations, the multiplier, which may energize economic operations, also enhances the degree of pay or return. As a result, monetary policy has an indirect impact on economic activity via interest rates and speculation.

Multipliers increase income or output as a result of increased investments, which can promote economic activity. As a result, monetary policy affects economic activity indirectly through influencing interest rates and investment. In the Keynesian transmission mechanism model, it is characterized by a very comprehensive sector-building up of aggregate demand, as well as a detailed portfolio adjustment procedure that provides interest a central role as an indirect link between monetary policy and fiscal demand (Fakeye, 2017).

A thorough point-by-point area developing of total interest and an enumerated definition of portfolio change measure that adds the targeted job to interest as a roundabout link between monetary policy and fiscal demand reflect the Keynesian transmission component in this way (Winner, 2018).

In plain terms, the monetary mechanism of Keynesians emphasizes the importance of money. Nonetheless, through the interest rate, it involves an indirect relationship between money and

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aggregate demand.

For this theory, the econometric parameters are as follows:

OMO = Open Market Operation

R = Commercial Bank Reserve

MS = Stock of Money

r = Interest Rate

I = Investment

GNP = Gross National Product

If the economy is initially in equilibrium, this open market operation (OMO) by the Central Bank of Nigeria (CBN) will boost commercial banks' reserves and grow bank reserves. As a result, the bank extends new loans or expands bank credit in other ways to get back to the ratio it wants. Additional demand deposits are formed as a result of these new loans, increasing the money supply (MS). As the money supply grows, the general level of interest rate (r) decreases. The profitability of commercial banks is affected by falling interest rates, and as a result, investment is promoted since businessmen seek to profit. As a result of the initial adjustment in investment, GNP's final demand spend increases by a factor of ten. Interest rates (R) rise when the money supply falls, enhancing the profitability of commercial banks (Jhingan, 2005)

2.3 Empirical Framework

Ehis (2020) examined the impact of monetary policy on deposit money banks' financial performance. Secondary data was used in the study, which covered the years 2010 through 2020. The random effect model was chosen as a result of the Hausman test carried out in the study, and the panel data estimation technique was employed in this test. He found out that the Monetary Policy Rate (MPR) and Cash Reserve Ratio (CRR) have a considerable impact on Deposit Money Banks' Return on Equity (ROE) in Nigeria, according to the findings. The CBN should formulate policies with the understanding that they will be based on the financial success of Nigeria's deposit money banks.

In the Nigerian financial system, Adupo (2017) looked into the factors that influence loans and advances. To determine their impact on loans and advances, the liquidity ratio, capital basis, bank deposit, and lending rates were employed. The findings show that the dependent variable (loans and advances) and the independent variables of total deposit, capital base, liquidity ratio, and lending rate have a relationship.

Commercial bank lending activities and economic growth in Nigeria were investigated by Oguda and Chinda (2018). They argue that because lending is the heart of the banking industry, bank management must exercise expertise and dexterity in formulating and implementing policies that ensure appropriate income and adequate liquidity while protecting the safety of the bank's finances.

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Ayodeji and Oluwole (2018) investigated the impact of monetary policy on economic growth in Nigeria by building a model that uses multi-variable regression analysis to evaluate how the government's monetary policy has affected economic growth. In order to create a parsimonious model, the Error Correction Model was introduced. Two variables (money supply and exchange rate) had a favorable but minor impact on economic growth, according to the findings. On the other hand, interest rate and liquidity ratio measures have a negative but considerable impact on economic growth.

For the economic period 1986 to 2016, Ufoeze, Odimgbe, Ezeabalisi, and Alajekwu (2018) investigated the effect of monetary policy on economic growth in Nigeria by using the natural log of GDP as the dependent variable against the explanatory monetary policy variables: monetary policy rate, money supply, exchange rate, lending rate, and investment. The unit root and co-integration tests were also performed using the Ordinary Least Squares method. The findings revealed that the variables have a long-term association. Furthermore, the study's main finding revealed that monetary policy rates, interest rates, and investment have a negligible positive impact on Nigeria's economic growth. Money supply, on the other hand, has a strong beneficial impact on Nigerian growth. The exchange rate has a large negative impact on GDP money supply, investment growth promotes economic growth, while interest rate growth causes interest rate growth.

Srithilat and Sun (2017) used annual time series data from 1989 to 2016 to investigate the impact of monetary policy on economic development. To examine the relationship between variables, the Error Correction Model was used. The findings reveal monetary policy accounts for 98 % of changes in Nigeria's economic growth and that in the long run, money supply, interest rate, and inflation rate all have a negative impact on real GDP per capita, with only the real exchange rate showing a positive sign. The conclusion of the error correction model suggests that money supply, real exchange rate, and real GDP per capita are all related in the short run.

Nasko (2016) used multiple regressions and time-series data from 1990 to 2010 to assess the impact of monetary policy on economic growth in Nigeria. Data on variables such as money supply, interest rate, financial deepening, and gross domestic product were analyzed. They were all shown to have a minor impact on Nigeria's economic growth. Price stability, balance of payment equilibrium, full employment, and economic growth are among the goals and objectives of monetary policy, according to the study. Changes in monetary policy application had a minor impact on growth, according to the study.

Ahmad, Afzal, and Ghani (2016) used an Autoregressive Distribution Lag (ARDL) Cointegration approach to examine the impact of monetary policy on economic growth in Pakistan. Annual time-series data from 1973 to 2014 were used to distinguish the robust among the variables, with short-run and long-run specifications. Empirical research revealed a long-run relationship between variables such as money supply and exchange rate, both of which have a favorable impact on economic growth. Inflation has a favorable impact on economic growth, whereas insignificance and interest rates have a negative impact.

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Adigwe, Echekoba, and Onyeagba (2015) used the Ordinary Least Square Method (OLS) regression technique with data from 1980 to 2010 to investigate the impact of monetary policy on the Nigerian economy. The analysis reveals that monetary policy, as represented by the money supply, has a beneficial impact on GDP growth but a negative impact on inflation rates.

3.1 Model Specification

The model is clearly stated in such a way as to establish a working connection between monetary policy and how it exerts on sustainable economic growth in Nigeria. It seeks to adopt three major monetary policy variables which are; Monetary Policy Rate (MPR), Exchange Rate (ER) and Money Supply (M2). Sustainable Economic Growth was measured with GDP per capita.

The model will be adjusted by establishing a multiple regression equation made of the independent variables which include: Money Supply, Monetary policy Rate, and Exchange rate who influences sustainable economic growth in the form of GDP per capita.

The model used in this study is based on modifying the model of Oke (2017) and stated as: GDP =f (MPR, LQR)

Where: GDP = Gross Domestic Product as proxy for economic growth

MPR = Monetary Policy Rate

LQR = Liquidity Ratio

The above model is modified in this study by introducing money supply and Exchange rate which were employed as independent variables.

The modified model is stated as: GDP =f (MPR, M2, ER)

Where:

GDP= Gross Domestic Product (per capita) as proxy for sustainable economic growth

MPR = Monetary Policy Rate

M2 = Money Supply

ER= Exchange Rate

The econometric model is stated as:

$\text{Log(GDP)} = \beta_0 + \beta_1\text{MPR} + \beta_2\text{LogM2} + \beta_3\text{ER} + \mu_t$ = intercept and β1, β2 and β3 are the coefficients of the regression equation

Secondary data was utilized in this research. The data utilized in this research work was generated from annual reports as well as the Central Bank of Nigeria Statistical Bulletin for the period of thirty years ranging from 1990 – 2023. The method of analysis adopted for this study is the regression analysis. This was selected so as to examine the trends of fluctuations in monetary policies adopted in Nigeria and explain their effect on sustainable economic growth in Nigeria over the years.

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4.1 Unit Root Test

The variables were verified for stationarity by subjecting them to unit root test using Augmented Dickey-Fuller test for stationarity. The result of the ADF unit root test tends to ascertain the presence of a unit root (non-stationary) tested against alternative hypothesis of the absence of a unit root (stationary). On the application of the ADF for the variable to be stationary, the ADF statistic (in absolute figure terms) must be greater than the standard critical value at 5 per cent level of significance. In table 4.2, the first differenced series of all the variables showed stationary, which means, that they are integrated of order one I(1) at first difference, trend and intercept. Thereby stating none of these series is integrated at levels or second difference. The implication was that the variables have long run relationship which was then tested by the Johansen cointegration test. The results of the ADF unit root test was shown table 4.1:

Table 4.1: Unit Root Test

Variables	ADF Statistic Test at 1st Difference	5% Critical Value	Probability	Order of Co-integration
LGDPPC	-4.280154	-3.574244	0.0308	I(1)
LMSU	-3.823704	-3.574244	0.0424	I(1)
MPR	-6.867008	-3.574244	0.0000	I(1)
EXR	-3.945735	-3.574244	0.0169	I(1)

Source: Author's computation using Eviews 9

4.2 Johansen Cointegration

The long run relationship was approximated utilizing the Johansen cointegration analysis and the null and alternate hypothesis was:

H_0: There is no long run relationship among the variables in the model

H_1: There is a long run relationship among the variables in the model

From the Johansen co-integration analysis in table 4.2, given the appropriate lag selection criteria to be 1, there was a long run relationship between log of sustainable economic growth (LGDPPC), monetary policy rate (MPR), log of money supply (LMSU), and exchange rate (EXR).

From the unrestricted cointegration rank test (trace statistics) in table 4.2, there existed two (2) cointegrating equation, with the probability value less than 0.05 confidence level and figures of 0.0036 and 0.0118.

From table 4.3, the maximum Eigen value also revealed two (2) cointegrating equations with figures of 0.0058 and 0.0363, proving that with both the trace statistics and the maximum Eigen value statistics, there was a long run relationship between the dependent variable log of sustainable economic growth and the independent variables monetary policy rates, log of money supply, and exchange rate.

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In summary, the null hypothesis was rejected, meaning that there is a long run relationship among the variables in the model. Since a long run relationship existed, the vector error correction model (VECM) was carried out to know the speed of adjustment of the long run relationship can converge in the next period.

Table 4.2: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.706939	58.57384	47.85613	0.0036
At most 1	0.367996	24.20734	29.79707	0.0118
At most 2	0.280750	11.35928	15.49471	0.1903
At most 3	0.073315	2.131965	3.841466	0.1443
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Table 4.3: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.706939	34.36650	27.58434	0.0058
At most 1	0.367996	12.84806	21.13162	0.0363
At most 2	0.280750	9.227314	14.26460	0.2677
At most 3	0.073315	2.131965	3.841466	0.1443
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's Computation Using Eviews 9

4.3 Vector Error Correction Model (VECM)

This was utilized to measure the speed at which long run equilibrium in period A converges into long run equilibrium relationship in period B. It is measured only if the variables were cointegrated which implied that there was evidence of a long-run relationship among the variables. Moreover, it is a restricted VAR model with cointegrating restrictions imputed into its specification. The coefficient in the VECM revealed how deviations from that long-run relationship affect the changes in the variable in the next time-period.

This means that those coefficients across cointeq1 under the VECM revealed how each variable will move in the next period to get back to the long run relationship. The cointeq1, at 5% level of significance would also show that any significant variable would adjust in the short-run period to become long run again in the next period.

Under table 4.4, the coefficient values of the cointeq1 would first be examined to know if there is long run relationship among the variables in the model to confirm the Johansen cointegration result. Then, the coefficient values of all the independent variables would be examined to know

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if each independent variable would be fast in getting back to a long run relationship in impacting the dependent variable in the next period. From table 4.4, the value of the cointeq1 was -0.033162, -0.029144, -0.037444, and -0.015856 respectively and was significant at 5% level of significance to prove the Johansen Cointegration result of a long run relationship among the variables in the model, and also that all the variables could converge long run in the next period at a short period of time.. Next is to check how fast the long run relationship could converge in the next time period.

The coefficient value of log of money supply (LMSU) at lag length 1 was 0.043658 and significant at 5% level of significance with positive sign, to reveal that it had a short run time period in having a long run impact on the dependent variable log of sustainable economic growth (LGDPPC). This showed that LMSU is a vital and significant variable that help sustain economic growth now at long run and also in the next period and the time of adjustment is 4% (0.043658). The coefficient of monetary policy rate (MPR) at lag length 1 was 0.003024 and positively significant at 5% level of significance to prove that it also has a short run time period in having a long run effect on the dependent variable sustainable economic growth (LGDPPC). It also proved that it is an important variable that would impact the dependent variable (LGDP) both now and the next period in the long run with speed of adjustment being 0.3%.

Finally, the coefficient of exchange rate (EXR) at lag length 1 was 0.000243 and also positively significant at 5% level of significance to prove that it also has a short run time period in having a long run effect on the dependent variable sustainable economic growth (LGDPPC). This also proved that it is an important variable that would impact LGDPPC both now and the next period in the long run with the speed of adjustment being 0.02%.

Table 4.4: Vector Error Correction Model Result

Error Correction:	D(LGDPPC)	D(LMSU)	D(MPR)	D(EXR)
CointEq1	-0.033162	-0.029144	-0.037444	-0.015856
	(0.03562)	(0.14312)	(3.69337)	(44.9547)
	[-0.93095]	[2.99859]	[2.61480]	[-0.35054]
D(LGDPPC(-1))	0.726909	0.750194	2.534723	-380.6256
	(0.18775)	(0.75432)	(19.4666)	(236.942)
	[3.87164]	[0.99454]	[0.13021]	[-1.60641]
D(LMSU(-1))	0.043658	0.500649	1.181891	-83.82619
	(0.03877)	(0.15574)	(4.01930)	(48.9218)
	[1.38416]	[3.21455]	[0.29405]	[-1.71347]
D(MPR(-1))	0.003024	0.012841	0.078549	2.491222
	(0.00205)	(0.00824)	(0.21257)	(2.58733)
	[1.47506]	[1.55900]	[0.36952]	[0.96285]
D(EXR(-1))	0.000243	-8.52E-05	0.012854	0.157930
	(0.00018)	(0.00073)	(0.01896)	(0.23079)
	[1.32922]	[-0.11596]	[0.67792]	[0.68431]
C	-0.004640	0.078725	-0.658884	49.59116
	(0.01542)	(0.06197)	(1.59926)	(19.4657)
	[-0.30084]	[1.27037]	[-0.41199]	[2.54762]

Source: Author's Computation Using Eviews 9

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4.4 Discussion of Findings

The vector error correction model (VECM) was conducted and it confirmed the long run and significant relationship between the dependent variable all the independent variables. The VECM also confirmed that all the independent variables had a short run speed of adjustment to move into the next period and impact the dependent variable positively and significantly.

The implication of the findings is that all the independent variables were vital in boosting sustainable economic growth both in the time period and the next time period. Therefore, the importance of monetary policies cannot be over-emphasized in achieving a sustained economic growth.

Therefore, the monetary policy variables affect most economic variables like pricing, foreign exchange, international trade, and so on, and all these would in turn boosts economic growth and development.

5.1 CONCLUSION

The study collected and analyzed secondary data in order to assess the impact of monetary policy on achieving a sustained economic growth in Nigeria. Analysis of the data revealed a significant relationship between monetary policy and sustained economic growth, which means that if the government through the Central Bank of Nigeria would take monetary policies seriously as it would affect the workings of the economy as a whole.

Therefore, the impact of monetary policies on the economy is a course for concern to stakeholders and government. This showed that monetary policies can help the nation achieve the United Nation's Goal 8 of economic growth.

5.2 Recommendations

Sequel to the result of this study, the following recommendations have been suggested for policy making:

1) The monetary authorities should make policies such as moderate increase in money supply. Such policies mean that money must not be too scarce nor too plenty. One effect of the policy is that it would regulate inflation in the economy.
2) Factors that increase exchange rate and reduce the value of the naira like import promotion should be discouraged.
3) Strategies in mitigating exchange rate risk should be made by the monetary authorities. An example is the development of the forward contract exchange rate market where players can freely participate in purchasing future contract of their foreign exchange needs early enough. This would mitigate the risk of exchange rate.
4) The study recommended that the central bank should adopt monetary easing strategies that would make the monetary policy rate (MPR) become a single digit rate. Double digit MPR constrains bank lending which also constrains economic growth.

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