The influence of monetary policy rate on the misery index in Nigeria

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Abstract

This study examined the influence of monetary policy rate on the misery index in Nigeria during the time frame of 1986-2023. To attain the objectives of the study, regression analysis using multiple linear model consisting of independent variable (monetary policy rate, CBN liquidity ratio, money supply and exchange rate) and dependent variable (misery index) were adopted for the study. An estimating technique using ordinary least squares (OLS) was applied to execute an empirical research using the stated model. The Augmented Dickey-Fuller (ADF) procedure was applied to test time series data stationery. Data was extracted from publications of the Central Bank of Nigeria (CBN) statistical bulletin and the National Bureau of Statistics bulletin for various years. The research determined a non-significant influence of monetary policy rate, CBN liquidity ratio, money supply, and exchange rate on the misery index in Nigeria ($t = 1.440050$, $r^2 = 0.021467$, adjusted $r^2 = -0.097143$, Durbin-Watson stat. = 1.470765, $p > 0.05$). Thus, the null hypotheses were not rejected. The result also showed that the Nigerian misery index was explained by 21% variance in the independent variables. It explains that monetary policy rate, CBN liquidity ratio, money supply, and exchange rate were not important predictors of the misery index in Nigeria.This implied that monetary policy rate, CBN liquidity ratio, money supply and exchange rate have no substantial influence on the misery index in Nigeria. It was recommended that the Central Bank of Nigeria should reevaluate monetary policy rate policies to stimulate investment and reduce poverty

and also improve the effectiveness of banks in providing credit by adjusting reserve requirements and promoting lending to productive sectors.

Keyword: Exchange rate, CBN liquidity Ratio, Misery Index, **M**onetary Policy Rate, Money Supply.

Introduction

The rapid rise in misery index globally is not a recent occurrence. The misery index serves as an economic gauge used to assess the economic welfare of the populace. It is the summation of unemployment rate and inflation rates, a way of measuring the performance of an economy (Reyhan and Pinar 2021). The index was initially created by Arthur Okun in 1966. Okun's misery index used to be calculated by adding a nation's yearly unemployment and inflation rates together. A higher index reflects greater suffering experienced by the average citizens, while a lower index signifies reduced levels of misery. It is presumed that rising unemployment and inflation rate will impose burdens economically and socially on a country. It could be seen as a basic measure of usefulness or as a function that represents dissatisfaction in an economy (Po-Chin, Shiao-Yen and Sheng-Chieh 2014). Okun's index underwent subsequent modifications by Robert Barro and called it "Barro's (1999) misery index. However, Hanke (2014) a Hopkins University economist modified the Barro's misery index. The metric is gotten by summing rate of unemployment, inflation and bank lending while subtracting the percentage changes in real GDP per capita. The immediate causes of the deteriorating economic discomfort index in the country stem from the inadequate performance of its components. The performances of these components exert significant influence on the index. The high rates of unemployment, inflation and bank lending rate and low rate of percentage changes in real gross domestic product per capita growth will unintentionally increase the index and intensify the level of misery within the population (George-Anokwuru, 2022). A high or deteriorating misery index has the capacity to worsen poverty and negatively affect the poor, as they are the most affected by the adverse performance of either or all of the various components of the index.

This metric has been utilized to create a ranking system for 89 countries, providing a comparative analysis of economic performance across a wide range of nations. Nigeria was initially excluded from the earlier ranking of the 89 countries, but has now been applied and calculated to facilitate a comparative analysis with other nations. This revised approach allows for a more comprehensive

evaluation of economic conditions in Nigeria in relation to the broader set of countries included in the ranking.

During the 1970's and early 1980's, many emerging countries, Nigeria included, faced a significant and severe economic downturn. This crisis took various shapes, such as enduring macroeconomic instabilities, fluctuating high levels of inflation and a rising unemployment rate (Onyekpe 2022). In many cases, this situation can deteriorate into an economic recession, as has been the case in Nigeria. The development of multiple policies to tackle the issue has been a result of efforts to diminish this widespread situation. Among these policies, monetary policy stands out as particularly significant. In Nigeria, government consistently apply monetary policy as a means of attaining specific economic goals within the economy. These goals include fostering employment, stimulating economic expansion and progress, reaching equilibrium with the balance of payments, and ensuring a relatively stable general price level. Monetary control strategy is a key mechanism for economic stabilization, encompassing a range of measures created by the apex bank to manage and moderate the quantity, cost and accessibility of money circulating within a financial system. This control is essential for achieving specific macroeconomic goals related to internal (domestic economic stability) and external (balance of payment) balances (CBN, 2011). A key currency regulation measure employed by the Nigerian government in this regard is the monetary policy rate (MPR).

Monetary policy rate also called interest rate or bank rate, is considered one of the crucial techniques for the apex bank in regulating the availability of money and consequently impacting the inflation rate (Anyaele, 2003). It acts as a benchmark for these banks when setting their interest rates for deposits and loans offered to their customers (Joel, 2024). Since its implementation, MPR constitutes one of the variables of monetary control strategy adopted by the apex bank in establishing targets and guidance for various rates (Aliyu, Saidu, Zubair & Dawood 2017). Central Bank of Nigeria in 2006, launched Monetary Policy Rate as a substitute for Minimum Rediscount Rate (MRR), as a result of the latter's ineffectiveness to act as a suitable yardstick for other cost of borrowing.

Central Bank of Nigeria in February 27, 2024, held Monetary Policy Committee (MPC) meeting. There the CBN Governor, announced a 4% raise in MPR, that is, from 18.75% to 22.75% and in

March 2024, it was raised to 24.75%. The substantial rise indicates the CBN's dedication to combating on inflation.

The monetary authority implicitly believes in the viability of this strategy, as seen by the CBN's constant use. However, the effectiveness of this instrument has been questioned. Kelilume, 2014 states that changes in the short- and long-term interest rates in the nation do not appear in the MPR. As a result, this study contributes by evaluating how the monetary policy rate influence Nigeria's misery index to provide more empirical insight. It was discovered that most of the studies based misery index calculations on Okun's calculation (Unemployment plus Inflation), excluding interest rate and GDP percentage change. These are the gaps the researcher tends to fill in this study. Thus, the primary goal of this research is to determine how the monetary policy rate affects Nigeria's misery index. This is how the remainder of the paper is organized: The study's research methodology is presented in section three, results presentation and discussion are the emphasis of section four, and the paper is summarized and concluded in section five. Section two examines relevant theoretical frameworks and empirical literature on the topic.

2. Literature review

2.1 Conceptual Review

Monetary policy rate (MPR) functions as a price tag apex bank set up for borrowing funds. It relates to the interest rate dictated by the central bank to extend credit to commercial banks. It acts as a standard for these banks when setting their interest rates for deposits and loans offered to their customers (Joel, 2024). Central Bank does not solely establish monetary policy rates by adjusting reserves held by the banking system, but also by utilizing announcement effects. Monetary policy rate doesn't directly influence economic growth; however, it does have an indirect influence through some factors like credit to private sector GDP ratio (CPS/GDP), the proportion of liquidity (LR), loan interest rate (LIR), proportion of cash reserves (CRR), and wide money supply GDP (M2/GDP) among others.

The MPR is adjusted by the country's banking system to either aid in expansion of the economy or to slow down raising prices, which occurs when prices rise too quickly. They can assist limit inflation by making borrowing more costly by raising the MPR. They lower it to make borrowing more affordable, which promotes growth and expenditure. Raise in MPR also support the naira,

that potential is, when MPR increase, it informs investors that their local currency investments have to yield larger profits. Nigerian currency gains worth in comparison to different currencies as a result of the influx of international investors. Consequently, lowering MPR influences economic growth. Reduction in the MPR decrease the interest expense, lowering the loans fee for the consumers and enterprises. This promotes investing, spending, income growth and higher levels of employment. By lowering MPR, CBN can alter the accessibility and charges associated with credit, helping to mitigate or correct risks to financial stability (Joel 2024). Central Bank of Nigeria in February 27, 2024, held monetary policy committee (MPC) meeting. There the CBN Governor, announced a 4% raise monetary policy rate (MPR), that is, between 18.75% and 22.75% and in March 2024, it was raised to 24.75%. The substantial rise indicates the CBN's dedication to combating on inflation. Central Bank of Nigeria in February 27, 2024, held monetary policy committee (MPC) meeting. There the CBN Governor, announced a 4% raise monetary policy rate (MPR), that is, between 18.75% and 22.75% and in March 2024, it was raised to 24.75%. The substantial rise indicates the CBN's dedication to combating on rising prices.

The Economic Discomfort Index (EDI), sometimes referred to as the Misery Index is among the initial efforts to create a comprehensive index incorporating various indicators to track macro-economic circumstances across different business cycles (Tule, Egbuna, Dada and Ebuh, 2017). According to Investopedia, misery index is a gauge of economic turmoil felt daily by people, due to the threat of joblessness along with rising living expenses. The misery index of a nation is a measure of economic hardship. Misery index is a comprehensive measure characterized by both magnitude and direction, typically driven by inflation, levels of unemployment and growth rate existing at a specific moment in time. Therefore, a rise in the misery index reflects a decline in consumer sentiment related to economic discomfort.

The decline in the country's misery index is primarily due to the inadequate performance of its underlying components: rate of interest, rates of inflation, unemployment rate and per capita real GDP growth. The elevated price levels, unemployment and interest rate and low rate of shift in the per capita real economic out will unintentionally increase the index and make people's degree of pain worse. The heightened degree of the nation's misery rating has the potential to exacerbate the prevailing condition of poverty. Hence, a careful analysis of the parts and how they work is necessary. The index was first developed by an economist Arthur Okun in 1966, incorporated inflation and unemployment rate to analyze the economic situation of a specific economy. Its

prominence grew in the the United States of America in the beginning of the 1970s as they faced a period of economic stagflation (increasing both unemployment and inflation). Due to the stagflation, it became apparent that elevated levels of either inflation or unemployment had adverse effects on the wellbeing of the citizens. Hence, Arthur Okun, proposed the misery index as a gauge of financial turmoil, because of the substantial strain instituted on individuals by the adverse United States financial circumstances during that period. It is calculated by combining the unemployment rate adjusted for seasonal variations alongside the inflation rate.

The misery index has undergone several iterations over time. Barro's Misery Index is one of them, it is supplemented by rate of return and GDP figures. By characterizing it as the sum of the interest rate, unemployment rate, and inflation rate, Hanke altered Borr's Misery Index with the shift in per capita actual GDP expresseed as a percentage (year -on- year) subtracted from this sum (Hanke 2014). The concept has also been adapted for other asset classes, including Bitcoin Misery Index, which assesses investors' distress (CFI, 2021).

2.2 Theoretical review

2.2.1 The Keynesian View of Monetary Theory

According to Keynesian economists, monetary policy is essential in influencing economic activity. Keynesian theory diverges from the idea that the connection between money and pricing is both casual and quantitative. Instead, it argues that this relationship is indirect and influenced by the rate of interest. A key component of Keynesian evaluation is the interest level. Keynes (1936) asserted that the interest level controls the nation's level of production, job creation, and capital. Since the financial institution uses interest rates to affect how resources are utilized and industrial operations, they are strongly related to economic growth in this regard. Interest rates are a good indicator of how reluctant people with cash on hand are to give it up over time. According to Keynes, the propensity to have cash on hand or be prepared to part with it is what drives interest rates. He termed this, liquidity preference. Keynes believed that while the prevalent interest rate (r) is known, the volume of money kept by the people is determined by desire for liquid assets. Inclination toward liquidity aversion is a function of interest rate if "M" is the quantity of cash to store, i.e

$$M = f(r) \quad (1)$$

Keynes distinguished between three reasons why people seek liquidity: transactional, precautionary, and speculative. The model for the desire for funds, or liquidity preference, is as follows if Mx stands for transaction and precautionary incentives and Mq for speculative incentives:

$$M = Mx + Mq \quad (2)$$

Keynes believed that earnings had a significant impact on transaction and cautious incentives, while return rates determined the speculative incentive. Equation (3) provides a symbolic representation of this:

$$M = Mx + Mq = Lx(Y) + Lq(r) \quad (3)$$

where M represents the overall demand for funds, and Mx represents the transactional and precautionary demands for funds, which are determined by income (Y) and equivalent to the liquidity function Lx(Y); and the speculative demand for fund, or Mq, is equivalent to the liquidity function, Lq(r), and is impacted by interest rates.

Equation (3) specifies demand for money as a function of choices between Lx and Lq (Appelt, 2016). Keynes maintained under the Keynesian liquidity theory that mortgage rates are determined by the availability and use of cash. Keynes' monetary interest rate theory basically finds that the optimal efficiency of financial assets has a positive effect on macroeconomic activity (McKinnon, 1973; Michael and Giovanni, 2005). For instance, a rise in the availability of money lowers interest rates, which improves the marginal efficiency of capital and has multiplier effects that boost monetary indicators like increased investment, general consumer demand for products and services, job creation, revenue generation, and the financial growth of the economy. However, in the event that interest rates rise, the contrary will occur.

It argues that the amount of money in circulation can have effects on factors like output, income, level of employment, in addition to the interest rate and overall demand. According to this, a rise in the availability of financial resources may lead to a steady rise in output. The overall effect of the availability of financial resources on the level of price is based on how it affects overall demand and the supply's volatility of overall production.

Keynes advocated for an equilibrium between unemployment and employment. They contend that level of employment hinges on effective demand, where demand drives output, which in turn generate income that eventually fuels employment opportunities. They view the link between

monetary policy and unemployment as a cycle of cause and effect, viewing employment as a function of income levels. Keynes support the use of cheap money, asserting that the initial effect on an increasing in the availability of financial resources is a decline on the rate of interest. Considering the marginal efficiency of capital, a decrease in interest rate will result to more investment. The higher investment will increase production, employment, and income by raising efficient demand through the multiplier effect (Jhingan, 2016).

The theory highlights the significant role of governmental regulatory bodies have in upholding full employment within the economy. They contend that accomplishing this objective involves regulating the amount of demand in the economy to achieve complete economic employment. To realize complete employment, the government can increase taxes on imported goods to boost revenue. Alternatively, the government has the option to offer tax incentives to local entrepreneur which will boost export volumes to offset the rise in imports, promote local production and facilitate job creation.

Further elaborating, Keynes (1934) therefore argues that the key to compact depression and misery and address unemployment lies in the aggregate demand function.

2.2.2 The Modern View of Monetary Policy

The contemporary monetary policy is founded on the portfolio adjustment process. It involves a comprehensive understanding of how central banks control interest rates and the monetary flow to accomplish particular monetary goals. Due to diverse range of assets included in the public portfolio, including bonds, stocks and mortgages, substitution and wealth effects are initiated when securities are bought on the open market by the central bank. Eventually, these impacts will raise output and total money demands (Jhingan, 2016). Central bank utilize monetary policy tools to influence financial conditions, promote price stability, maximize employment levels and support overall economic growth. In this theory, policymakers adjust interest rates, participate in open market operations and adopt forward guidance to move the economy in the desired path.

Moreover, modern monetary policy takes into account inflation targeting frameworks and transparent communication strategies to enhance predictability and credibility. By employing a data-driven approach and considering macroeconomic indicators, central banks can adapt their monetary policy stance to respond to shifting economic circumstances effectively. Overall, modern

view of monetary policy emphasizes flexibility, transparency and a dynamic approach to promoting a stable and prosperous economic environment.

2.2 Empirical Review

George-Anokwuru (2023) investigated the ways in which the country's monetary policies and misery index are related. It employed money supply, benchmark rate and exchange rate as the variables of central bank policy. The findings showed that benchmark rate and exchange rate indicate a strong connection with the misery index. Nonetheless, no substantial correlation exist between total money supply and the misery index throughout the research timeframe.

Mordi, Adebiyi and Omotosho, (2019) researched on adapting interest rates fluctuations using error correcting methodology with uneven corrections and structural breakdown in Nigeria. The aim is to evaluate the interest rate's magnitude and modification pattern transmission techniques of monetary policy rate to specific Nigerian retail rate of interest. The findings indicate a lasting monetary policy effect on top lending rates, savings, and major structural disruptions. Although, it showed a partial interest rate transmission, there was a strict procedure for retail pricing adjustments in return to the monetary policy rate. Furthermore, every other retailing rates, excluding the investment rate, varies uniformly, therefore savings rates respond differently to changes in MPR.

Alade (2015) explored the identification of an optimal threshold for monetary policy rate in Nigeria. The aim is to investigate the threshold of Nigeria's monetary policy rate through the application of threshold methods that provide effective process tools for threshold methods that offer efficient process instruments for inference and estimation. Augmented Dickey-Fuller, Phillips-Perron techniques and Granger Causality were employed. The findings reveal optimal levels of MPR for various macroeconomic indicators such as: 15% for external reserves, 10% for GDP growth, 9% for investment and 8% for inflation. In conclusion, it suggests that establishing a barrier for monetary policy rate should be based on a forward guidance methodology to monetary policy communication. This strategy should be predicted on results related to price hikes, foreign reserves, output, investment and anticipated inflation.

Aliyu, Saidu, Zubair and Dawood (2017) analyzed how changes in Nigeria's central bank rate affect lending rates. The study aims to examine how monetary policy rate impacts Nigeria's lending rates across short and long durations. The study adopted principal component, ridge

regression and Ordinary Least Square models. Findings showed that central bank rate has a major influence on the Treasury bill and interbank rates and also a negative and statistically insignificant relationship with lending rates.

Ihensekhien and Akungu (2020) studied the link between misery index and foreign capital inflow into Nigeria from 1981 to 2017. It used rate of unemployment and inflation to proxy misery index. The results of the parsimonious error correction demonstrated that there is no correlation with Nigeria's foreign capital influx and the misery index. Additionally, an adverse connection was observed between foreign capital and the currency rate and misery index. Nonetheless, any departure from equilibrium in foreign capital brought on by modifications in the explanatory variables would be rectified after 69 days (83%), according to the results of the estimate exercise for the model with foreign capital as the explained variable.

Ubah, Bowale, Ejemeyovwi, Jacobs, Adeleye and Ihayere (2021) studied Nigeria's economic growth nexus and misery Index: Consequences for Electrical Energy Management. Economic development and misery index are analyzed with data from 1987 to 2017. According to the study, the misery index is an incalculable combination of inflation and unemployment that is, it used Okun's calculation of misery index. It examined the index against gross domestic product, access to power, population growth and death rate. Results showed a long-run nexus between population, expansion rate, and access to power, mortality rates, and suffering.

Okonji and Igbanugo (2019) carried out a study on macroeconomic performance and welfare of Nigeria with the insights from Hanke's misery index. The purpose is to explore the significance of performance of the national economy in enhancing the overall welfare of the populace. Selected indicators of macroeconomic performance were used, which are economic expansion, debt, monetary and fiscal policy positions, and governance effectiveness. They conducted an estimation of a K-Class model using monthly sequential data from 1990 to 2017. The work found out that economic increase, supported by allocative and distributive efficiency, contributed to the overall wellbeing. On the other hand, a stringent fiscal policy, characterized by a boost in interest rate and unemployment rate, had a suppressing influence on welfare. In addition, the study indicated that the high level of domestic borrowing within the Nigerian economy has a detrimental effect on the welfare of its citizens. Consequently, it was suggested that the monetary authority reassess its existing strategy regarding the upkeep of elevated rediscount rate in Nigeria.

Ibrahim and Enofe (2021) evaluate the correlation within financial policy tools and Nigeria's revenue growth. The purpose is to evaluate the link between financial policy tools and Nigeria's revenue growth adopting yearly data spanning from 1986 to 2018. The techniques used was ordinary least squares and auto regressive distributed-lag. The results showed that in the short term, only monetary policy rate had a favorable and substantial effect on Nigeria revenue growth. GDP had a negative and meaningful effect while money supply had a negative and noteworthy influence on Nigeria's revenue growth in the long term. They advised that the monetary authority should pursue a policy of monetary expansion aimed at fostering a swift increase in the supply of money. This will result to a reduction of monetary policy rate, which would subsequently boost aggregate investment. If properly implemented, these measures could enhance economic growth.

Oseni and Oyelade (2023) conducted research on the effects of currency control policies on the prosperity of Nigerian financial system. It aims to ascertain how fiscal policies influence Nigeria by assessing its impact on the country's economic progress using various macroeconomic variables. To empirically analysis the data, descriptive statistics, unit root and Johansen co-integration were utilized. The results indicated that total number of employees, aggregate monetary base and total investment in capital have a supportive and meaningful influence on gross domestic product, whereas interest rate demonstrates unfavorable and substantial influence on gross domestic product.

Daniel, Paul and Edmond (2022) conducted research on how the interest rate differences shapes economic development in Ghana. The aim is to assess the role of interest rate differences in shaping economic development from Ghana's viewpoint, using data set of yearly time series from 1975 to 2018. The research employed Engel-Granger two-step method, which utilizes Ordinary Least Square technique to ascertain the long-term and short-term correlations of interest rate spread with economic development. The result revealed the importance of difference in mortgage rate in figuring out the economic development in Ghana, although it shows an adverse effect in the long term. Also, it indicates that workforce, trade, and capital resources positively influence economic development in Ghana both in short and long term.

Njie and Badije (2021) evaluated how borrowing cost impact economic progress in Gambia. The aim is to evaluate the effectiveness of borrowing cost on the gross domestic product of Gambia from 1993 to 2017. Vector error correction mechanism was adopted. Post estimation tests were also conducted, including Lagrange Multiplier test for estimation error self-correlation and Jarque

Bera test to evaluate stability and determine if the estimation errors follow a normal distribution. The result shows nonexistence of short-term link between borrowing cost and economic progress in Gambia; however a long term link exists between the true cost of borrowing, effective exchange rate and GDP.

Martinianus and Teresia (2021) investigated the nexus between borrowing cost as a component of financial regulation and economic development in Namibia. The objective is to determine the link within borrowing cost and gross domestic product in Namibia for the duration covering 1980 to 2019. The study adopted Vector Autoregressive Model (VAR) technique. The findings indicate that Namibia's key lending rate does not significantly influence economic development. This result remains strong and coherent when using dynamic response analysis and variance breakdown. The dynamic response analysis demonstrates that a shock to the key lending rate reveals an opposite correlation. Nevertheless, this influence is minimal in both short and long-term contexts. A list of differences reveals that the key lending rate has a significantly extrinsic effect, suggesting it has little impact on the economy.

Grigoli and Mota (2017) adopted augmented dickey-fuller test and engle-granger test to evaluate Interest rate pass-through in Dominican Republic. The study showed a complete influence of monetary strategy on retail rates, indicating that the transmission mechanism is working effectively. However, it also showed that the transfer to loan rate is quicker compared to rates of deposit, and that short-term rates have uneven adjustments. Specifically, rates of deposit adjust more quickly in response to policy rate cuts, while lending rates adjust more quickly when policy rates increase.

2.3.1 Research gap

The study differs from previous studies which based misery index calculations on Okun's calculation (Unemployment plus Inflation), excluding interest rate and GDP percentage change, rather it specifically adopted Hanke method of misery index calculation, which is the summation of unemployment, inflation and interest rate minus growth rate of GDP which none of the examined research have made use of. Though, broad studies were done to ascertain the relationship between monetary policy rate and misery index, yet no consensus had been reached on the issue as it is still a contemporary topic in today's economic and accounting environment.

3. Research Methodology

3.1 Research Design

In accordance with McCombes (2019), research design is a framework aimed at answering a set of research questions. The research made use of the *ex-post facto* design as it was based on historical data, secondary data. The rationale behind adopting the design is because the study is after finding whether monetary policy rate will significantly affect or not the misery index.

It employed Ordinary Least Square (OLS) technique as the main econometric instrument for evaluating the impact of monetary policy rate on misery index in Nigeria. A structural equation model for multiple regression analysis is shown below; it serves as the framework for this paper.

$$Y= \beta_o + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e \quad (4)$$

Where: Y1 = dependent variable, α0 = intercept, β_1, β_2, β_3 and β_4 are variable coefficients, X_1, X_2, X_3 and X_4 = regressors and $e1$ = error term. The variables are: Misery index, monetary policy rate, CBN liquidity ratio, money supply and exchange rate. Time series data from 1986 to 2024 extracted from Central Bank of Nigeria statistical report and National Bureau of Statistics bulletin for various years, and also from past empirical studies relating to the study were used.

3.2 Model Specification

To examine the influence of monetary policy rate on misery index in Nigeria, the following functional model, which is anchored on the Keynesian theory of interest rate was specified.

MI=f(MPR,CBNLR,MS,EXR,) (5)

Equation 6 is transformed into an econometric form as follows:

$$MI=\beta0+\beta1MPR+\beta2CBNLR+\beta3MS+\beta4EXR+e \quad (6)$$

Where,

MI = Y = Misery Index (dependent variable)

MPR = X_1 = Monetary policy rate (Independent variable)

CBNLR = X_2 = CBN Liquidity ratio (Independent variable)

MS= X_3 = Money supply (Independent variable)

EXR = X_4 = Exchange rate (Independent variable)

β_o = Constant

β_1, β_2, β_3 and β_4 are the regression parameters

e is the stochastic error associated with the model.

4. Data analysis, interpretation and discussion of findings

4.1. Unit Root Test

Given the nature of most time series data, which are frequently non-stationary, it is essential to perform unit root testing to confirm their stationarity. This study used Augmented Dickey-Fuller (ADF) unit root testing procedures to determine the series' degree of stationarity. Table 1 shows the results of the ADF unit root test for the variables being examined.

The Augmented Dickey-Fuller (ADF) procedure was applied to test the stationarity of the time series data. The tests on CBN liquidity ratio, money supply, and exchange rate were conducted with a trend and intercept and the test on monetary policy rate was conducted with intercept. The table shows the ADF test results at level, the first and the second differences. The results revealed that the test statistics were greater than critical values at 5% in the first and the second differences. For example, the monetary policy ratio indicated a higher test statistics (-10.32169)) than the critical value (-2.945842) as $p< 0.05$. This implies that the data were stationary. Therefore, the null hypotheses of unit root were rejected.

Preliminary Analysis

Table 1: ADF Unit Root Test Results

Variable	ADF at level ( ) Critical values at 5%*	ADF 1st Diff. ( ) Critical values at 5%*	ADF 2nd Diff. ( ) Critical values at 5%*	Remark
MPR	(-2.298103) -2.945842	(-10.32169) -2.945842*	(-10.40256) -2.951125*	1(2)
CBNLR	(-3.827688) -3.536601	(-5.324059) -3.562882*	(-5.827458) -3.580623*	1(2)
MS	(-2.012032) -3.580623	(-1.940111) -3.580623	(-6.677627) -3.580623*	2
EXR	(1.321921) -3.552973	(-4.174755) -3.552973*	(-5.002214) -3.562882*	1(2)

MPR: monetary policy rate; CLR: CBN liquidity ratio; MS: money supply; EXR: exchange rate.
*Denotes critical level at 5% confidence levels. Values in ( ) represent ADF test statistics.
Source: Author's computation (2025).

4.2. Presentation of Regression Results

Table 2 below displays the estimated regression results.

Multiple Regression Analysis

Table 2: Multiple Regression Result

Dependent Variable: MISERY_INDEX
Method: Least Squares
Date: 07/11/25 Time: 14:36

Sample: 1986 2023
Included observations: 38

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46.50506	32.29405	1.440050	0.1593
MONETARY_POLICY_RATE	0.271682	0.366758	0.740767	0.4641
CBN_LIQUIDITY_RATIO	-0.343221	0.973307	-0.352634	0.7266
MONEY_SUPPLY	7.45E-05	0.001425	0.052247	0.9586
EXCHANGE_RATE	-0.015701	0.085712	-0.183186	0.8558

R-squared	0.021467	Mean dependent var	38.25289
Adjusted R-squared	-0.097143	S.D. dependent var	23.22566
S.E. of regression	24.32762	Akaike info criterion	9.343181
Sum squared resid	19530.49	Schwarz criterion	9.558653
Log likelihood	-172.5204	Hannan-Quinn criter.	9.419844
F-statistic	0.180992	Durbin-Watson stat	1.470765
Prob(F-statistic)	0.946627		

Source: Author's Computation, 2025.

The influence of monetary policy rate, CBN liquidity ratio, money supply, and exchange rate on the misery index in Nigeria was examined with least squares regression. The research determined a non-significant influence of monetary policy rate, CBN liquidity ratio, money supply, and exchange rate on the misery index in Nigeria ($t = 1.440050$, $r^2 = 0.021467$, adjusted $r^2 = -0.097143$, Durbin-Watson stat. = 1.470765, $p > 0.05$). Thus, the null hypotheses were not rejected. The result also showed that the Nigerian misery index was explained by 21% variance in the independent variables. It explains that monetary policy rate, CBN liquidity ratio, money supply, and exchange rate were not important predictors of the misery index in Nigeria.

4.3 Discussion of Findings

The research established a non-significant statistical influence of monetary policy rate on the misery index in Nigeria. This result was similar to past findings (Martinianus & Teresia, 2021; Okeke & Chukwu, 2021; Oluwaseun, 2021; Ufoeze, Odimgbe & Ezeabalisi, 2018; Aliyu, Saidu, Zubair & Dawood, 2017). Martinianus and Teresia (2021) found that interest rates do not significantly impact economic expansion in Namibia. Okeke and Chukwu (2021) determined an insignificant effect of monetary policy rate on the employment rate in Nigeria. Oluwaseun (2021) found an insignificant favorable correlation between Nigeria's economic growth and the monetary policy rate. Ufoeze, Odimgbe and Ezeabalisi (2018) ascertained an insignificant positive correlation between monetary policy rate and economic development in Nigeria. Aliyu, Saidu,

Zubair and Dawood (2017) revealed an insignificant correlation between monetary policy rate and lending rates in Nigeria. Ngerebo (2016) discovered that Nigerian inflation is not statistically impacted by the monetary policy rate.

On the contrary, the result was different from previous findings (Daniel, Paul & Edmond, 2022; Njie & Badije, 2021; Ibrahim & Enofe, 2021; Henry & Sabo, 2020; Mordi, Adebiyi & Omotosho, 2019; Grigoli & Mota, 2017). Daniel, Paul and Edmond (2022) revealed a statistical interest rates' impact on economic expansion of Ghana. Njie and Badije (2021) ascertained a significant link between interest rates and economic expansion of Gambia. Ibrahim and Enofe (2021) established a positive significant impact of monetary policy rate on economic growth in Nigeria. Henry and Sabo (2020) discovered that monetary policy rate impacted negatively on inflation in Nigeria. Mordi, Adebiyi and Omotosho, (2019) established an effect of monetary policy rate on savings and prime lending rates in Nigeria. Ayomitunde, Olaniyi, Zannu, & Stephen, (2018) ascertained a significant influence of monetary policy rate on Nigeria economy. Enock and Nicholas (2018) revealed that economic growth of developing countries was significantly determined by the monetary policy rate. Grigoli and Mota (2017) found a significant impact of monetary policy on retail pricing in Dominican Republic.

5. Conclusion and Recommendation

The issue of misery index in Nigeria is crucial because it is a contemporary topic in today's accounting environment. In Nigeria, misery index was not associated with monetary policy rate, CBN liquidity ratio, money supply and exchange rate. Changes in these variables do not result to the misery index of the citizens. Keynesian view upheld that the money supply and the level of prices had an indirect link. Interest rates fluctuate in response to changes in the money supply; the volume of production and income, in addition to overall demand and employment. The study concluded that bank rate does not influence the economic woes of the Nigerian citizens, the cash reserve requirement of Central Bank of Nigeria does not lead to economic misery of the Nigerian public, quantity of money in circulation does not result to economic discomfort of the Nigerian populace, and the value of the Nigerian currency against other currencies does not lead to economic distress of Nigerians. Other factors might have contributed to the misery index in the country. Therefore, the research recommended that Central Bank of Nigeria should reevaluate monetary policy rate policies to stimulate investment and reduce poverty. It should also improve the effectiveness of banks in providing credit by adjusting reserve requirements and promoting lending

to productive sectors. The Central Bank of Nigeria should align money supply growth with GDP growth. The government of Nigeria should implement a managed floating exchange rate, to stabilize economic conditions.

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