

**MONETARY POLICY AND MISERY INDEX IN NIGERIA: AN EMPIRICAL
ANALYSIS OF HANKE'S INDEX.**

BY

**AIKPITANYI, IYOBOSA
PG/SSC1104756**

**A PROJECT SUBMITTED TO THE DEPARTMENT OF ECONOMICS, FACULTY
OF SOCIAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE,
NIGERIA. IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF MASTER OF SCIENCE (M.Sc) DEGREE IN ECONOMICS.**

NOVEMBER, 2025.

ABSTRACT

Nigeria's economy has been characterized by persistent macroeconomic instability, evident in its high and often volatile inflation rates and alarming unemployment figures. Misery Index in Nigeria, with an empirical focus on Hanke's Misery Index, over the period 1992–2024. Grounded in the Quantity Theory of Money and the Phillips Curve, the study investigates how changes in money supply, exchange rate volatility, government expenditure, and oil prices influence economic distress. Using annual time series data, the research applies unit root tests to assess stationarity, correlation analysis to explore inter-variable relationships, and the Autoregressive Distributed Lag (ARDL) approach to capture both short- and long-run dynamics. The ARDL bounds test indicates no evidence of long-run cointegration among the variables. Empirical findings reveal that increases in money supply significantly elevate the Misery Index, while exchange rate volatility does not have a significant impact. Lagged government expenditure reduces economic distress, and increase in oil price have a negative but marginally insignificant effect on the Misery Index. The study concludes that coordinated monetary and fiscal policies, informed by both inflation-output trade-offs and money supply considerations, are essential for stabilizing economic welfare in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Preamble

The misery index—combining a nation’s unemployment and inflation rates—reflects the level of economic hardship citizens face. In Nigeria, where macroeconomic instability is common, understanding how monetary policy shapes this index is especially important. The Central Bank of Nigeria (CBN) applies tools such as the real interest rate, cash-reserve ratios, and open-market operations to regulate money supply and credit, which in turn affect inflation and unemployment. The theoretical aim is to achieve price stability and foster economic growth, thereby reducing economic misery. However, studies on Nigeria reveal a complex and often challenging relationship. While monetary policy theoretically possesses the potential to reduce the misery index by controlling inflation and stimulating employment, its effectiveness in Nigeria has been a recurring concern (George-Anokwuru, 2023). For instance, the monetary policy rate and exchange rate have been found to have a significant relationship with the misery index, suggesting that their judicious management is crucial (George-Anokwuru, 2023). Persistent high inflation and unemployment rates in Nigeria have often resulted in an increased misery index, weakening the purchasing power of citizens and hindering their economic well-being (Proshare, 2021). This underscores the need for monetary authorities to critically evaluate their strategies, particularly regarding interest rate policies to stimulate investment and job creation, and exchange rate management to mitigate economic volatility (George-Anokwuru, 2023). Ultimately, the challenge for Nigeria's monetary policy remains to translate its potential into tangible reductions in the misery index, fostering a more stable and prosperous economic environment for its citizens. The Misery Index, combining inflation and unemployment rates, reflects citizens’ economic hardship. In Nigeria, where macroeconomic instability is common, monetary policy significantly influences this index. The Central Bank of Nigeria (CBN) uses tools like the real interest rate,

cash-reserve ratios, and open-market operations to manage money supply and credit, aiming to stabilize prices and promote growth. Evidence shows, however, that the relationship between monetary policy and the Misery Index is complex. High inflation and unemployment persistently raise the index, reducing purchasing power and economic well-being. Effective monetary policy requires careful management of interest rates to stimulate investment and employment, alongside exchange rate policies to mitigate volatility. Broadly, monetary policy controls the value, supply, and cost of money to match economic activity, regulate credit, and support macroeconomic stability, including price stability, balance of payments, and job creation.

1.2 Statement of the problem

Nigeria's economy has been characterized by persistent macroeconomic instability, evident in its high and often volatile inflation rates and alarming unemployment figures. These twin challenges have a direct impact on the well-being of the average Nigerian, as contained in the misery index. Despite the Central Bank of Nigeria's continuous deployment of monetary policy instruments, the nation's misery index has consistently remained high, suggesting a potential disconnect between policy intentions and outcomes, or the presence of significant constraints on policy effectiveness. Increased unemployment is a consistent feature, particularly among the youth and a large segment of the working-age population. This not only implies a waste of human capital but also triggers social unrest, crime, and aggravates poverty (NBS, 2021; Soludo, 2004). Despite various government initiatives and monetary policy measures aimed at stimulating economic activity, sustainable and inclusive job creation remains difficult. Persistent inflationary pressures, especially food inflation, have been a dominant feature of the Nigerian economy for many years. This weakens the purchasing power of citizens, disproportionately affecting low-income earners, and makes economic planning difficult for businesses and households (CBN, 2023; Anyanwu, 2014). The recent surge in inflation further intensifies the economic hardship faced by Nigerians.

The combined effect of high unemployment and inflation has consistently resulted in a high misery index for Nigeria, indicating widespread economic hardship. This index has shown concerning trends, with Nigeria often featuring prominently on global misery index rankings (Hanke, 2024), underscoring a deep-seated economic discomfort. The uncertainty of monetary policy impact in Nigeria is a significant concern. While theoretical frameworks suggest that monetary policy can influence both inflation and unemployment, the extent and direction of this impact in Nigeria are not definitively clear. Some studies suggest a significant relationship between monetary policy rates and the misery index (e.g., Asekunowo & Olaiya, 2016), while others find limited or insignificant effects of broad money supply (e.g., Alalade & Fagbemi, 2018). The challenge lies in determining whether the current monetary policy framework adequately addresses the underlying causes of unemployment and inflation, or if other structural factors and exogenous shocks (e.g., global oil price fluctuations, security challenges, climate change) are playing a more dominant role, thereby weakening the efficacy of monetary policy.

This situation presents a policy dilemma for Nigerian policymakers, who often face a choice, prioritize price stability, which might involve contractionary policies that could stifle growth and increase unemployment, or focus on stimulating employment, potentially at the risk of higher inflation. This trade-off, as depicted by the Phillips Curve, is a critical consideration for the CBN, especially in an economy characterized by structural rigidities (Okafor and Isiaka, 2019). The optimal balance between these objectives remains a contentious issue.

1.3 Research questions

This study seeks to answer the following research questions:

1. What is the impact of money supply on misery index in Nigeria?
2. What is the impact of exchange rate volatility on misery index in Nigeria?

1.4 Objectives of the study

The broad objective of this study is to examine the impact of monetary policy on the misery index in Nigeria. The specific objectives are to:

1. estimate the impact of money supply on misery index in Nigeria.
2. examine the impact of exchange rate volatility on misery index in Nigeria.

1.5 Research hypotheses

Based on the research questions, the following null hypotheses will be tested:

H₀₁: An increase in money supply has no significant impact on misery index in Nigeria

H₀₂: An increase in exchange rate volatility has no significant impact on misery index in Nigeria

1.6 Significance of the study

A study investigating the impact of monetary policy on the misery index in Nigeria carries profound analytical significance, offering critical insights into the nation's economic welfare and the effectiveness of its macroeconomic management. By focusing on the misery index, which combines key indicators like inflation and unemployment rates, the research provides a comprehensive lens through which to assess the actual economic discomfort experienced by average Nigerians, moving beyond isolated statistics to capture the multifaceted nature of economic hardship. This holistic perspective is particularly relevant for Nigeria, a country frequently struggling with high inflation and persistent unemployment, which collectively contribute to a significantly increased misery index and widespread public dissatisfaction.

The analytical value of such a study lies in its capacity to rigorously evaluate the efficacy of the Central Bank of Nigeria's (CBN) various monetary policy tools. It can determine if specific policy decisions, such as adjustments to the Monetary Policy Rate, the Cash Reserve Ratio, or exchange rate management, genuinely translate into a reduction of the misery index. For instance, if the study reveals that contractionary monetary policies aimed at curbing inflation inadvertently worsen unemployment, it highlights critical trade-offs that policymakers must carefully consider. Conversely, empirical evidence demonstrating a

positive impact of certain monetary measures on reducing the misery index would provide strong justification for their continued application and refinement. This evidence-based approach is crucial for optimizing policy formulation, ensuring that interventions are not only theoretically sound but also practically effective in Nigerian.

Furthermore, this research contributes significantly to the broader discourse on socio-economic stability and development in Nigeria. A high misery index is directly correlated with increased poverty, decreased purchasing power, and an high risk of social unrest. By analytically establishing the links and transmission channels between monetary policy and the misery index, the study underscores the vital role of sound monetary management in fostering inclusive growth and maintaining social cohesion. It can inform recommendations for policies that prioritize not just macroeconomic stability but also tangible improvements in the living standards and overall welfare of the people. Beyond its direct policy implications, the study also enriches existing economic literature, particularly concerning developing economies. Through the application of robust econometric methodologies, it can provide nuanced insights into long-run relationships and short-run dynamics, thereby advancing academic understanding and offering valuable lessons for nations and stakeholders confronting similar challenges in managing economic misery through their monetary policies.

1.7 Scope of the study

This study investigates the effect of monetary policy on economic hardship using Hanke's Misery Index, which combines inflation, unemployment, and lending rates minus real GDP per capita growth. Key variables include broad money supply (M2), exchange rate volatility (EXRV), government spending (GOVEX), and oil prices (OLP), with exchange rate uncertainty modeled via GARCH(1,1). The analysis uses annual data from 1991–2024 from the World Bank WDI and CBN bulletin, covering major policy changes, reforms, and economic shocks, with the study focused on Nigeria.

1.8 Organization of the study

The study is organized into six chapters. Chapter One introduces the research, outlining the problem, objectives, hypotheses, scope, and limitations. Chapter Two reviews monetary policy, the Misery Index, Nigeria's policy history, economic crises, and macroeconomic trends. Chapter Three covers relevant theories, empirical studies, and literature gaps. Chapter Four presents the theoretical framework, model, and methodology. Chapter Five analyzes the data and results, while Chapter Six concludes with key findings and policy recommendations.

CHAPTER TWO

BACKGROUND TO THE STUDY

2.1. Evolution of Monetary Policy in Nigeria

Nigeria's economic history is a chronicle of recurring crises, each demanding a distinct monetary policy response shaped by a complex interplay of internal vulnerabilities, external shocks, and often inconsistent policy frameworks. The nation's heavy reliance on oil revenues has rendered its economy particularly susceptible to global commodity price fluctuations, while domestic challenges such as fiscal deficits, political instability, and structural bottlenecks have consistently complicated the efficacy of monetary interventions.

The inaugural severe crisis of the modern era emerged in the early 1980s, triggered by a catastrophic collapse in global oil prices. This external shock precipitated a sharp decline in government revenues, creating significant balance of payment deficits and fueling a rise in both inflation and unemployment Central Bank of Nigeria (2019). In response, the government, under guidance from international financial institutions, enacted the Structural Adjustment Program (SAP) in 1986. This program represented a fundamental shift towards market-oriented reforms, including currency devaluation and trade liberalization. While intended to correct structural imbalances, the SAP induced significant short-term economic hardship, sharply increasing the cost of living and exacerbating unemployment, thereby cementing a period of profound social and economic distress.

Economic instability persisted throughout the 1990s, characterized by bouts of high inflation and wildly unstable exchange rates. During this period, monetary policy was often rendered ineffective. Political instability, culminating in the struggle to transition to democratic rule, and a lack of policy consistency created an environment where the Central Bank of Nigeria's (CBN) efforts to control money supply and anchor prices were frequently undermined by fiscal dominance and speculative attacks on the naira.

The Global Financial Crisis (GFC) of 2007-2009 presented a different type of challenge. While Nigeria's financial system was not as deeply integrated into the global banking network as those of developed nations, the crisis still transmitted through a sharp decline in oil prices and a reversal of capital flows. The CBN's response was notably interventionist, implementing measures to stabilize the banking system and ensure adequate liquidity, thereby preventing a systemic collapse but highlighting the economy's external vulnerability.

A more severe and homegrown crisis arrived in 2016. A concurrent sharp drop in global oil prices and a dramatic decline in domestic oil production due to militancy in the Niger Delta plunged the economy into recession. The CBN's initial response, which included foreign exchange restrictions to conserve reserves, created significant distortions and a large premium in the exchange rate. Although the Bank adjusted the Monetary Policy Rate (MPR) upwards, these measures struggled to curb the ensuing stagflation, as inflation remained persistently high despite contracting economic growth. Most recently, the COVID-19 pandemic and subsequent global economic disruptions exacerbated Nigeria's pre-existing vulnerabilities. Supply chain disruptions, a fall in remittances, and a crash in oil prices once again exposed the economy's structural weaknesses. The aftermath has been defined by persistently high inflation, widespread unemployment, and severe foreign exchange volatility. In a determined effort to combat these pressures, the CBN has embarked on its most aggressive tightening cycle in history. The Monetary Policy Rate was raised consecutively from 11.5% in 2022 to 18.75% in 2023, and further to 22.75% by February 2024 (CBN, 2024). This hawkish stance has been recognized by the International Monetary Fund (IMF) as a critical anchor for achieving macroeconomic stability (CBN, 2024).

However, this policy path embodies the classic central banking dilemma. While tightening is essential for curbing inflation and attracting foreign investment to stabilize the Naira, it simultaneously raises the cost of borrowing for businesses and the government. This inevitably constrains investment and consumer spending, potentially stifling economic

growth and exacerbating the very unemployment issues that contribute to the nation's high misery index. Thus, the CBN's current strategy represents a calculated risk, prioritizing price and exchange rate stability in the short to medium term, with the hope of fostering a more stable foundation for sustainable long-term growth.

2.2. Economic crisis and monetary responses in Nigeria

Nigeria has a history of economic crises, each requiring a specific monetary policy response. These crises have been caused by a combination of internal issues, external shocks like oil price fluctuations, and inconsistent policies.

In the early 1980s, Nigeria faced a severe economic crisis with declining oil revenues, balance of payment deficits, and rising inflation and unemployment. In response, the Structural Adjustment Programme (SAP) was implemented, which introduced market reforms but also caused significant economic hardship. The mid-1990s continued to see economic instability, with high inflation and fluctuating exchange rates, and monetary policy was often ineffective due to political instability and inconsistent policies.

During the 2007-2009 Global Financial Crisis, Nigeria was less affected than developed nations, but the Central Bank of Nigeria (CBN) still implemented measures to stabilize the financial system and ensure liquidity. The country experienced another recession in 2016, triggered by a sharp drop in oil prices and production along with foreign exchange restrictions. The CBN's response included adjusting the Monetary Policy Rate (MPR) and managing the exchange rate, but inflation remained high. More recently, the COVID-19 pandemic and global economic disruptions worsened existing vulnerabilities in the Nigerian economy. This has led to persistent high inflation, unemployment, and foreign exchange volatility. To combat inflation and stabilize the Naira, the CBN has repeatedly increased the MPR, raising it from 11.5% in 2022 to 22.75% in February 2024. While these tightening measures are intended to moderate inflation and stabilize the currency, they could also impact

economic growth and employment. The IMF has recognized the CBN's tight monetary policy as a key factor in Nigeria's economic stability.

2.3. Monetary policy and macroeconomic instability in Nigeria.

Both fiscal and monetary policies are designed to support macroeconomic stability. Using international evidence, this study assesses how well monetary policy curbs inflation and exchange-rate instability. The results indicate that when monetary policy helps finance fiscal deficits—especially through inflationary means—it affects inflation and the real exchange rate, increasing their volatility. Inflation itself is also shown to drive fluctuations in both variables. This implies that monetary policy must be clearly defined and carefully implemented to remain effective.

The central objective of monetary policy is price stability, particularly maintaining low and stable inflation. Exchange-rate swings can strongly influence key economic indicators such as interest rates, wages, prices, unemployment, and output. Persistent instability may create macroeconomic imbalances that require real exchange-rate adjustments (Parikh & Williams, 1998). Bernanke and Gertler (1999) argue that financial and price stability complement each other, since stable prices foster stable economic conditions and interest-rate increases help contain inflation and asset-price surges. However, other studies (Bernanke & Gertler, 1989; Mishkin, 1998; Allen & Gale, 1999, 2000) note that shocks to prices or interest rates can themselves create financial strain.

This study assesses how effectively monetary policy manages inflation and exchange-rate instability in Nigeria using a rational-expectations model that emphasizes fiscal effects on the real exchange rate. In the model, inflation, exchange rates, fiscal policy, and monetary policy interact in a joint equilibrium, drawing on sunspot-equilibrium theory linking instability to multiple possible outcomes. The study also examines how inflation targets influence relative prices and market signals. Sections II–IV review monetary policy, exchange-rate models, and empirical results, with concluding remarks last. Since 1959, the CBN has aimed to promote

economic welfare through money supply management, focusing on inflation control and exchange-rate stability via tools like credit regulation and reserve management to influence prices, competitiveness, and external balances.

2.4. An Analysis of Misery Index in Nigeria

The misery index, a succinct economic indicator popularized by economist Arthur Okun in the 1970s, quantifies economic distress by summing a nation's unemployment and inflation rates (Okun, 1970). This composite metric reflects the dual burden citizens face: the hardship of joblessness and the eroding effect of rising prices on purchasing power. A higher index value signifies greater economic discomfort, often correlating with social and political dissatisfaction.

In the context of Nigeria, the misery index has proven to be a particularly relevant gauge due to the economy's susceptibility to external shocks and internal structural weaknesses. Periods of oil price volatility, fiscal deficits, and currency instability have frequently translated into high inflation and elevated unemployment, propelling the index to alarming levels (CBN, 2022). For instance, in 2024, with inflation soaring above 33% and unemployment remaining stubbornly high, Nigeria's misery index ranked among the highest globally (Hanke, 2024).

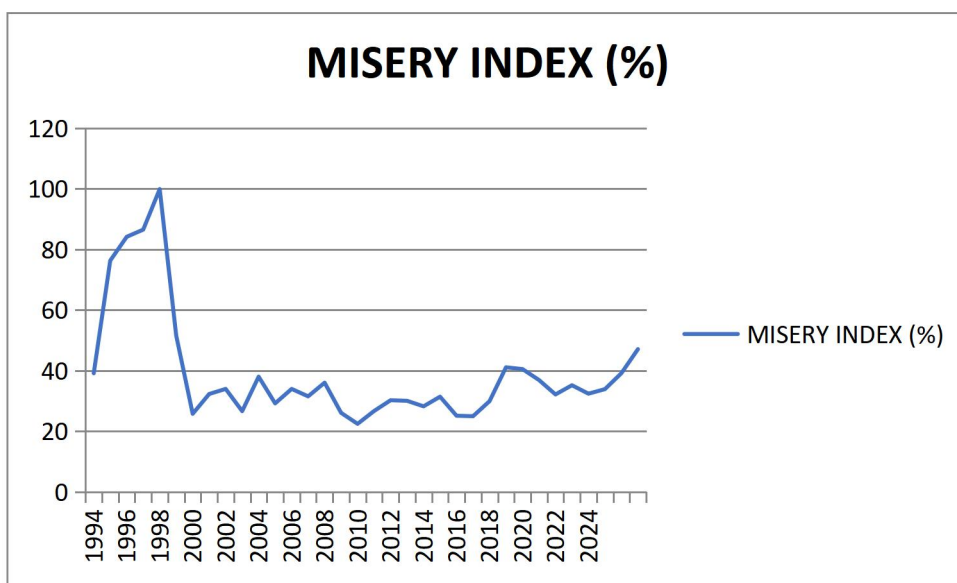
Hanke's Annual Misery Index (HAMI) offers a broader quantification of economic distress than the traditional measure by incorporating four key variables: unemployment, inflation, bank lending rates, and the annual change in real GDP per capita. By summing the "bads" (unemployment, inflation, and lending rates) and subtracting the "good" (GDP per capita growth), the index provides a comparative snapshot of a nation's economic hardship (Hanke, 2022). This expanded framework aims to capture a more comprehensive picture of macroeconomic suffering, particularly in economies where high borrowing costs and stagnant growth compound the misery caused by joblessness and rising prices.

The index has proven particularly revealing in analyzing economies like Nigeria, which consistently ranks among the most miserable nations. For instance, in 2022, Nigeria's HAMI

score of 47.2 reflected the severe impact of double-digit inflation, high unemployment, and elevated borrowing costs (Hanke, 2022). This trend has persisted, with projections for 2024 suggesting the index could surpass 100, indicating a dramatic deepening of economic distress driven by currency volatility and subsidy removals (Nupemco, 2025).

While the HAMI provides a useful tool for cross-country comparison and highlighting acute economic pain, it is not without limitations. Critics note that it remains a simplified metric that may overlook critical nuances such as income inequality, underemployment, and informal economic activity, which are prevalent in many developing nations (Sachs, 2013). Nevertheless, it serves as a stark, easily digestible indicator of macroeconomic stability and the overall burden shouldered by a country's population.

Figure 2.1 The trends of misery index in Nigeria



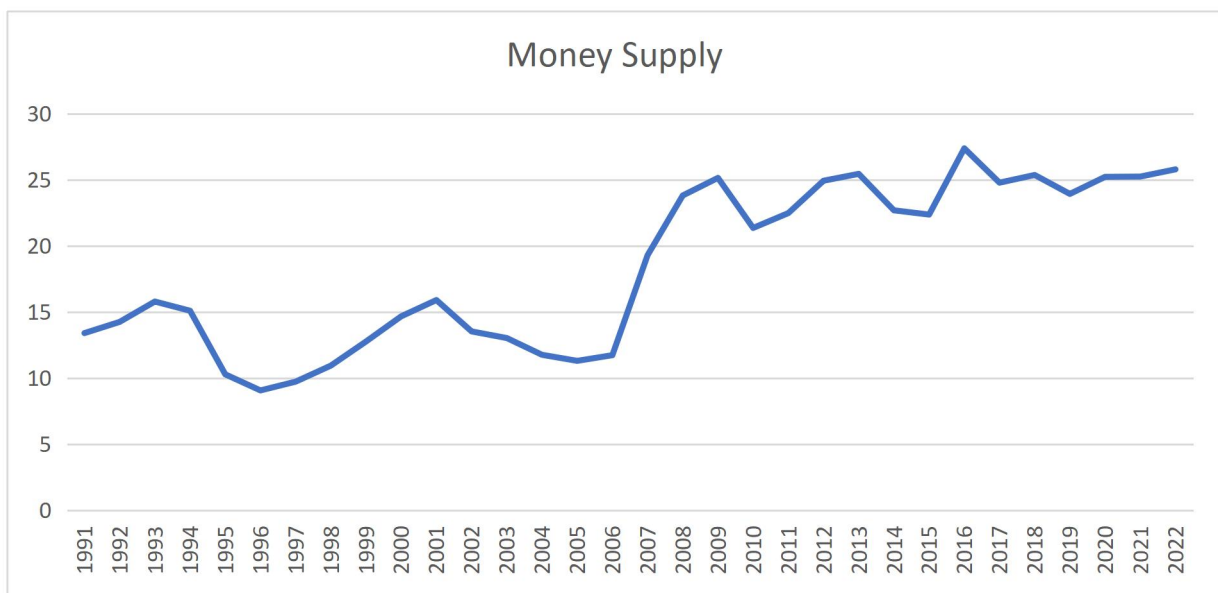
Source: Author's computation from World Bank (2025)

The graph depicts the Nigeria economic experience as measured by misery index and has been a journey through distinct phases of economic hardship. The period from the mid-1990s to the early 2000s stands out as one of the extreme crisis, with the index skyrocketing to nearly 100%. The enormous spike reflects a time of severe economic distress, where Nigerians faced a crippling combination of rapidly rising prices and lack of job opportunities.

Following this peak, there was a dramatic improvement around 2002, with the index quickly falling and then entering a long phase of relative stability that lasted until around 2016. During these years, the economic environment was less volatile, but the index hovering between 20% and 40% still signifies that a significant portion of the population continued to bear a consistent economic burden, facing steadily, albeit lower, pressure from inflation and unemployment. However, the last decade, starting around 2016, shows a clear and concerning upward climb. The index has been steadily rising again, indicating a worsening of conditions for the average Nigerian, with pressure of economic hardship and joblessness intensifying once more in recent years up to 2024. In essence, the chart illustrates a shift from an initial period of acute pain to an era of moderate but sustained difficulty which has now transitioned into new phase of increasing hardship.

2.5. An Analysis of Monetary Policy Variables in Nigeria

Figure 2.2. The trends of money supply in Nigeria



Source: CBN (2024)

The trajectory of money supply in Nigeria reflects a complex interplay of oil revenue cycles, evolving monetary policy frameworks, and profound structural changes within the economy.

As revealed by Figure 2.3, broad money supply (M2) has experienced significant growth over this period, punctuated by phases of explosive expansion and deliberate contraction, largely dictated by the Central Bank of Nigeria's (CBN) attempts to manage inflation and stabilize the national currency.

The period from the early 1990s through the mid-2000s was characterized by moderate but volatile growth in money supply. This era was heavily influenced by the legacy of the Structural Adjustment Programme (SAP) of 1986, which liberalized the financial sector. Monetary policy was often subordinated to the financing needs of the government, leading to episodes of high fiscal deficits that were monetized by the CBN. This process, known as "ways and means" financing, directly increased the monetary base and contributed to high inflation throughout the 1990s (CBN, 2008). The primary tool for controlling money supply during this time was the frequent adjustment of the Cash Reserve Requirement (CRR) and the use of Open Market Operations (OMOs) to mop up excess liquidity.

A significant structural shift occurred with the banking sector consolidation of 2004/2005, which recapitalized banks and spurred a credit boom. This led to a rapid expansion in money supply as newly capitalized banks increased lending. The period preceding the 2008-2009 Global Financial Crisis (GFC) saw robust M2 growth, fueled by high oil prices and substantial foreign capital inflows. While the Nigerian banking system was not directly exposed to toxic subprime assets, the crisis triggered a capital flight reversal and a sharp decline in oil prices. In response, the CBN adopted an accommodative monetary stance, lowering policy rates and reducing reserve requirements to inject liquidity and stave off a credit crunch, which inevitably led to a surge in money supply (Sanusi, 2010).

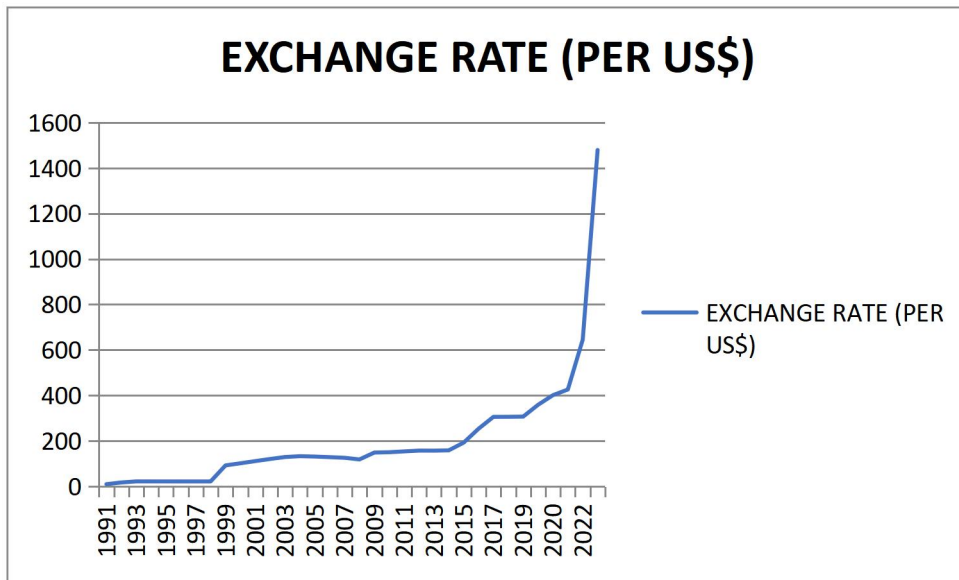
The post-2010 era up to 2022 was marked by a new set of challenges that heavily influenced money supply dynamics. The collapse of oil prices in 2014-2016 led to a severe recession and intense pressure on the foreign exchange market. The CBN's response to preserve external

reserves included imposing foreign exchange restrictions and, at times, direct intervention in the FX market. These actions had direct consequences for the money supply; for instance, selling dollars to prop up the naira withdrew naira liquidity from the system. However, the concurrent need to finance growing fiscal deficits often offset these contractionary effects, as the government borrowed from the banking sector, expanding net domestic assets and, by extension, the money supply (World Bank, 2020).

The most recent phase, from 2022 to 2024, has been defined by an aggressive monetary tightening cycle in response to hyperinflationary pressures. Headline inflation rose persistently, reaching 33.69% in April 2024 (NBS, 2024), driven by forex illiquidity, high energy costs, and security challenges affecting agriculture. To combat this, the CBN has deployed a hawkish mix of policy instruments. The Monetary Policy Rate (MPR) was raised from 11.5% in 2022 to 24.75% by the first quarter of 2024 (CBN, 2024a). More impactful for money supply control, the Cash Reserve Ratio (CRR) was aggressively increased to 45% for commercial banks, a tool designed to directly immobilize a significant portion of bank deposits and restrict their lending capacity (CBN, 2024b).

Consequently, while the nominal level of broad money (M3) reached an all-time high of over ₦93 trillion in early 2024, the rate of money supply growth has begun to show signs of deceleration in response to these tight policies (Nairmetrics, 2024). This indicates that the CBN's primary focus has shifted from stimulating growth to anchoring inflation expectations and stabilizing the naira, even at the potential cost of constrained economic activity and higher borrowing costs. The trend from 1990 to 2024, therefore, illustrates a gradual and often turbulent evolution from a fiscally dominated monetary expansion to a more deliberate, if still challenging, attempt to use monetary aggregates as a tool for macroeconomic stability.

Figure 2.3 The trend of Exchange rate in Nigeria



Source: CBN (2024)

Figure 2.4 depicts the exchange rate of the Nigerian Naira (NGN) against the US Dollar (USD) from 1991 to 2024. The vertical axis shows the value of the USD in Naira, while the horizontal axis represents the years. A rise in the line on the graph signifies a depreciation of the Naira, meaning more Naira is needed to buy one US Dollar. Conversely, a flat or downward-trending line would indicate a stable or appreciating Naira.

The diagram illustrates a clear and consistent trend of Naira depreciation over the 33-year period. Initially, from 1991 to the late 1990s, the exchange rate was relatively stable, with the Naira holding its value within a narrow band. The exchange rate began a gradual but steady increase from the early 2000s, indicating a slow depreciation of the Naira. However, the most significant and dramatic change occurred from around 2014 onwards. The graph shows a sharp, near-vertical climb, indicating a rapid and severe devaluation of the Naira. This trend intensified further in the later years, with the currency's value plummeting to unprecedented lows. By 2024, the Naira had lost a massive portion of its value against the US Dollar, a stark contrast to its value in the early 1990s.

Nigeria's ongoing currency decline results from both internal and external pressures. Its heavy dependence on crude oil for foreign exchange and government revenue makes the economy—and the currency—highly sensitive to global oil price swings.

One of the primary causes of the Naira's decline has been the volatility and, at times, collapse of global oil prices. When oil prices are low, Nigeria earns fewer dollars, which reduces the supply of foreign currency in the economy. This reduced supply, coupled with a high demand for foreign exchange (driven by a significant import-dependent economy) creates a severe imbalance. This imbalance exerts enormous pressure on the Naira, forcing its value down. Another key factor has been Nigeria's multiple exchange rate system which, for a long time, created a gap between the official and parallel (black) market rates. This policy often led to speculation, corruption, and a shortage of foreign currency in the formal market.

The impact of the Naira's depreciation on the Nigerian economy and its citizens has been profound and largely negative. A weaker Naira leads to higher inflation, as the cost of imported goods, raw materials, and machinery skyrockets. This "cost-push" inflation makes life more difficult for the average person, as the purchasing power of their income diminishes. Furthermore, it increases the cost of production for local industries that rely on imported inputs, which can lead to factory closures and job losses. The depreciation also makes it more difficult for the government to service its foreign debt, as more Naira is required to pay back the same amount of USD. While a devalued currency can theoretically boost non-oil exports by making them cheaper, Nigeria's limited non-oil export base means it hasn't been able to fully capitalize on this benefit. Overall, the diagram and the country's experience paint a picture of an economy struggling to maintain currency stability amidst structural weaknesses and global market dynamics.

CHAPTER THREE

LITERATURE REVIEW

3.1 Conceptual Literature

Monetary policy involves actions by authorities to regulate money and credit to achieve macroeconomic goals. In Nigeria, the Central Bank manages these policies to promote stability and reduce hardship. Economic distress is measured by the Misery Index (MI), developed by Okun, which sums unemployment and inflation. A higher MI indicates greater economic hardship, while unemployment reflects the portion of the labor force unable to find work.

High unemployment signifies a lack of income-generating opportunities, leading to financial hardship and reduced purchasing power for a substantial portion of the population (George-Anokwuru, 2022), while Inflation Rate measures the rate at which the general price level of goods and services is rising, leading to a fall in the purchasing power of currency. High inflation erodes the value of savings, increases the cost of living, and disproportionately affects lower-income households (George-Anokwuru, 2022).

Over time, variations of the misery index have emerged to capture a more comprehensive picture of economic well-being. Barro Misery Index (BMI): Developed by Robert Barro, this index expands on Okun's original concept by adding the interest rate and the shortfall (or surplus) between the actual and trend rate of GDP growth (Investopedia; Daily Trust, 2022). This modification accounts for the cost of borrowing and the deviation from expected economic growth. Hanke's Misery Index (HMI): Professor Steve Hanke further refined the index, defining it as the sum of the unemployment rate, inflation rate, and bank lending rate, minus the year-over-year percentage change in real GDP per capita (Hanke, as cited in Daily Trust, 2022; Naira metrics, 2023). Hanke's version is frequently applied to cross-country comparisons and provides a broader perspective on economic distress by incorporating the

cost of capital and changes in per capita income. In the Nigerian, researchers have largely adopted these established conceptualizations. Studies frequently utilize either the traditional Okun's misery index or the more comprehensive Hanke's misery index, depending on the scope and data availability. For instance, (George-Anokwuru, 2022) measured the misery index as the sum of unemployment, inflation, and lending rates minus the percentage change in Real Gross Domestic Product per capita in their study on monetary policy.

Nigeria's misery level is heightened by several major factors, particularly high unemployment, inflation, and interest rates. For example, between 2005 and 2007, the country's unemployment rate showed a persistent upward trend at 9.4%, 9.9%, and 10.9% respectively. The rate further rose to 12.8% in 2008 before declining slightly to 11.2% in 2009 (CBN, 2007; George-Anokwuru, 2022). By 2013, unemployment stood at 10%.

In 2014, the proportion of unemployed individuals in the labor force was 7.8%. This figure increased to 10.4% in 2015, representing a 2.6% rise from the previous year. By the end of 2016, unemployment had grown to 13.9%. The rate remained in double digits, increasing from 18.8% in the third quarter of 2017 to 23.1% in the third quarter of 2018. By the second quarter of 2020, Nigeria's unemployment rate reached 27.1% (CBN, 2013–2018). However, more recent data from the National Bureau of Statistics (NBS) shows significant improvement, with unemployment declining to 4.3% in the second quarter of 2024.

Beyond unemployment, rising inflation has also become a major contributor to the country's economic misery, eroding the purchasing power and general welfare of Nigerians. Inflation has consistently remained a subject of concern. Available data indicate that the inflation rate stood at 12.2% in 2012 but declined slightly to 8.5% and 8.1% in 2013 and 2014, respectively. This downward trend was not sustained, as inflation climbed to 9% in 2015 and surged further to 18.6% in 2016. In 2017, it recorded a mild decline to 15.4%. Persistent double-digit

inflation remains troubling for the Nigerian economy (Gbosi, 2015; CBN, 2018). In 2019, inflation still exceeded the single-digit target. As of April 2025, the inflation rate stands at 23.71%, reflecting a sharp increase.

3.2 Instruments of monetary policy

This literature review focuses on the instruments of monetary policy, reveals a consensus among economists and central bankers on the primary tools used to achieve macroeconomic stability, but also highlights ongoing debates about their effectiveness, particularly in developing economies like Nigeria. The core instruments open market operations, money supply, interest rate, and reserve requirement are the subject of extensive study, with researchers often analyzing their impact on key economic variables such as inflation, economic growth, and exchange rates.

A significant body of literature focuses on the open market operations (OMOs) as the most potent and flexible tool for managing liquidity Mishkin (2012). OMOs involve the central bank's buying and selling of government securities, which directly influences the money supply and short-term interest rates. Studies by researchers like Adegbite and Alabi (2013) on the Nigerian context affirm that the central bank's ability to manipulate the money supply through OMOs is crucial for price and exchange rate stability. However, the effectiveness of this tool is contingent on a well-developed and liquid financial market, a condition that may not always be present in developing countries.

The reserve requirement, the proportion of deposits banks must hold, is another widely studied instrument. While it can be a powerful tool for controlling the money supply, literature suggests that its use can be blunt and disruptive to bank operations (Goodhart, 2007). In Nigeria, the Cash Reserve Ratio (CRR) has been a frequently adjusted instrument to manage liquidity and inflationary pressures. Some studies, such as the one by Ujuju and Ly (2021), have found that while the CRR has a significant influence on inflation, its effect can

be subject to policy lags and other structural factors in the economy. The discount rate, or Monetary Policy Rate (MPR) as it's known in Nigeria, is the interest rate at which commercial banks can borrow from the central bank. It serves as a signal of the central bank's monetary stance. A review of the literature shows that changes in the MPR are intended to influence a cascade of interest rates throughout the economy, thereby affecting investment and consumption decisions (Twinoburyo and Odhiambo, 2018). However, the literature on Nigeria reveals a nuanced picture. Bank-Ola (2021) suggests that while the MPR has had a long-run effect on reducing inflation, its short-run impact may be less significant. This highlights a persistent challenge in Nigeria where the transmission mechanism of monetary policy is often impaired by structural rigidities.

In addition to conventional tools, a growing body of literature explores the use of unconventional monetary policy instruments, especially in response to financial crises or specific economic challenges. Selective credit controls are a key example, where the central bank directs credit to specific sectors to achieve developmental goals. The CBN has historically used these measures to promote growth in critical sectors like agriculture and small and medium-sized enterprises (SMEs) (CBN, n.d.).

A recurring theme in the literature on Nigeria is the debate over the efficacy of monetary policy instruments in a context of fiscal dominance and a dualistic financial market. Scholars argue that the effectiveness of the CBN's monetary policies is often undermined by excessive government spending (fiscal dominance) which floods the economy with liquidity, and the co-existence of a large informal sector that operates outside the central bank's control (Uchedu, 2009). This means that while the central bank may be tightening monetary policy, the government's fiscal actions may be working in the opposite direction, creating a policy mix that is difficult to manage. Another critical point raised in the literature is the impact of exchange rate volatility on the effectiveness of monetary policy. Given Nigeria's import-

dependent economy, a depreciating Naira directly contributes to inflation, making the central bank's fight against price instability even more challenging. Several studies conclude that monetary policy is more effective in curtailing inflation when it is complemented by a stable exchange rate management framework CBN (2022).

3.3 Theories of misery index (Inflation and Unemployment)

The relationship between inflation and unemployment is a cornerstone of macroeconomic theory, with various schools of thought offering different explanations and implications for policy. This analytical and comprehensive overview will delve into the major theories, their underlying assumptions, and their evolution over time.

3.3.1 Quantity theory of money (QTM)

The Quantity Theory of Money asserts that inflation is mainly driven by the money supply: more money in circulation leads to higher prices, summarized as "too much money chasing too few goods." This relationship is expressed through the equation of exchange.

$$MV = PQ$$

Where:

M = Money Supply

V = Velocity of Money (the average number of times a unit of money is spent in a given period)

P = Price Level

Q = Quantity of Goods and Services (Real Output)

Hence, classical economists, notably Irving Fisher, often assumed that V and Q (especially at full employment) are relatively stable in the short run. Therefore, changes in M directly lead to proportional changes in P. In Monetarist View, Milton Friedman, a prominent monetarist, famously stated that "inflation is always and everywhere a monetary phenomenon." Monetarists argue that excessive growth in the money supply, beyond the growth in real output, is the sole necessary and sufficient condition for inflation (Friedman, 1963)

While the QTM holds strong in the long run, its short-run applicability is debated. Velocity of money can fluctuate, and output may not always be at full employment, complicating the direct link between money supply and price level in the short term.

3.3.2 The Philip Curve

The Phillips Curve, developed by A.W. Phillips in 1958, describes an inverse relationship between inflation and unemployment. Lower unemployment raises workers' bargaining power, increasing wages and prices, while higher unemployment reduces wage and price pressures. Initially embraced by Keynesians as a policy trade-off, the theory suggested that lower unemployment could be achieved at the cost of higher inflation. However, the 1970s stagflation—simultaneous high inflation and unemployment—challenged this simple relationship, prompting a re-evaluation of the theory.

3.3.3 The Natural rate of Unemployment (NRU)

The Phillips Curve's failure in the 1970s led to the Natural Rate of Unemployment (NRU) hypothesis by Friedman and Phelps, highlighting expectations. Short-run expansionary policies can temporarily lower unemployment, but as inflation erodes wages, unemployment returns to the NRU. In the long run, the Phillips Curve is vertical, showing no permanent trade-off. The NRU (or NAIRU), determined by real factors like labor markets and technology, guides policy: unemployment below it accelerates inflation, while above it slows inflation.

3.3.4 Rational Expectations Theory

Building upon the NRU hypothesis, the Rational Expectations Theory, primarily associated with Robert Lucas, Thomas Sargent, and Neil Wallace in 1970s and 1980s, posits that individuals form their expectations about the future not just on past data, but by using all available relevant information, including knowledge of government policies and how the economy works. No Short-Run Trade-off (under anticipated policy), If economic agents have rational expectations and anticipate government policies, they will immediately adjust their

behavior to offset the intended effects of those policies. For example, if the central bank announces an expansionary monetary policy, rational agents will immediately expect higher inflation and demand higher wages, thus negating any short-run boost to employment. A strong implication of rational expectations is the policy ineffectiveness proposition, which states that anticipated monetary policy changes have no effect on real variables like output and employment, even in the short run. Only unanticipated policy shocks can have temporary real effects. However, this theory suggests that governments have very limited ability to use demand-side policies to influence real economic activity. Instead, focus should be on supply-side policies to improve the efficiency and flexibility of markets.

3.3.5 Monetarism

Monetarism, led by Milton Friedman, stresses that inflation is mainly driven by money supply growth, with only a short-term effect on unemployment. Following the Quantity Theory of Money ($MV = PT$), monetarists argue that changes in the money supply directly affect prices, since velocity (V) and output (T) are relatively stable in the long run. Like the NRU hypothesis, they see no long-term trade-off between inflation and unemployment. Therefore, monetarists favor steady, predictable money supply growth instead of discretionary policy to control inflation.

3.3.6 Supply-Side Economics

Supply-side economics, unlike the Phillips Curve, focuses on boosting aggregate supply through tax cuts, deregulation, and investment in infrastructure and education. By raising productivity, these policies can increase output and reduce unemployment without fueling inflation, effectively “improving” the Phillips Curve. Critics note potential issues like inequality and implementation lags. Overall, the inflation-unemployment relationship has evolved from a simple trade-off to a complex dynamic shaped by expectations, structural factors, and policy credibility. Sustainable unemployment reduction requires addressing structural issues and managing expectations, not just short-term demand management.

3.4 Empirical Literature

The misery index, traditionally defined as the sum of the inflation and unemployment rates, serves as a crucial indicator of economic distress. In Nigeria, a country often grappling with macroeconomic instability, understanding the influence of monetary policy on this index is paramount. This review synthesizes recent empirical studies, examining the separate impacts of monetary policy on inflation and unemployment in Nigeria, alongside insights from foreign studies.

3.5 Impact of monetary policy on inflation in Nigeria

Inflation in Nigeria has been persistently high, often in double digits. The Central Bank of Nigeria (CBN) uses tools like the Monetary Policy Rate, open market operations, exchange rate management, and the cash reserve ratio to maintain price stability.

Nigeria Studies

Several studies have examined the impact of monetary policy on inflation and economic hardship in Nigeria. Henry and Sabo (2020) used an ARDL model (1985–2019) and found that the monetary policy rate and exchange rate reduced inflation, while broad money supply had a minor positive effect. Clement et al. (2021) reported that monetary policy had little impact on inflation, though short-term treasury bill rates helped reduce it. Adeosun et al. (2023) showed that the monetary policy rate moderated demand-driven inflation but had limited effect on food inflation due to supply shocks. NESG (2024) highlighted that money supply growth contributes to inflation, but fiscal expansion and structural issues limit policy effectiveness. George-Anokwuru (2023) linked the monetary policy rate to the misery index, but broad money supply was ineffective. Finally, CBN (2025) maintained the MPR at 27.5% to manage high inflation, reflecting reliance on interest-rate adjustments.

Foreign studies

Akande and Dandaura (2024) used a FAVAR model and found that the monetary policy rate strongly influences inflation, emphasizing that its effectiveness depends on clear targets and well-functioning frameworks alongside other tools like the Treasury bill rate and cash reserve ratio. Similarly, Abdulkareem et al. (2025) employed an ARDL model and showed that while raising the MPR curbs core inflation, its impact on food inflation is limited due to supply shocks and adverse weather.

Sveriges (2025). Investigate that central bank reports incorporate detailed econometric models and forecasts to inform policy decisions. The report discusses the challenges of maintaining inflation at a 2% target, acknowledging that perfect control is neither possible nor desirable in the short term due to economic changes. It highlights that monetary policy is guided by forecasts of economic development, and that risks from global geopolitical tensions can affect inflation outlooks. This emphasizes the forecasting aspect of monetary policy and external factors that can influence inflation.

Akande, et al. (2024) this study utilizes a Factor Augment Vector Autoregression (FAVAR) model to re-examine the impact of monetary policy instruments on inflation in Nigeria. It aims to improve inflation forecasting and analyze the effectiveness of instruments like the monetary policy rate, Treasury bill rate, and cash reserve ratio. The findings suggest that estimated factors improve inflation forecasts and highlight a significant impact of the monetary policy rate on inflation. The study also emphasizes that for these instruments to be effective, they need to be anchored on efficient operating and monetary targets.

Ogwu and Alimi (2025) use a robust econometric approach, likely VAR/VECM, to examine how monetary policy instruments like interest rates and money supply impact inflation and economic growth, offering insights for achieving price stability and sustainable growth.

Akinluy and Abiola (2023) apply a NARDL model to study the asymmetric effects of monetary policy on food inflation, showing how rate hikes versus cuts differently influence food prices, providing detailed guidance for policymakers.

3.6 Impact of monetary policy on Unemployment in Nigeria

Monetary policy influences unemployment via the Phillips Curve, suggesting a short-term inflation-unemployment trade-off, though structural issues in Nigeria often weaken this link.

Nigeria studies

Several studies have examined how monetary policy affects unemployment in Nigeria. Okeke and Chukwu (2021) found that broad money supply boosts employment, while the cash reserve ratio, MPR, exchange rate, and liquidity ratio had mixed effects. Chukwuemeka (2022) reported that lending and rediscount rates influence unemployment differently in the short and long run, with the exchange rate having little impact. RSIS International (2025) showed that higher money supply reduces unemployment, whereas higher MPR raises it. Abdullahi and Umar (2025) confirmed that expansionary monetary policy increases jobs, while higher interest rates reduce employment. Okotori and Gbalam (2020) highlighted that key CBN policy tools significantly affect inflation. Bredino et al. applied rigorous time-series methods, demonstrating the long-run significance of monetary instruments on employment. Overall, monetary policy is a key determinant of Nigeria's unemployment trends.

Foreign studies

Zhou (2021) examined monetary policy and unemployment in the U.S. from 1983 to 2018, splitting the data into pre- and post-2008 crisis periods. Using an extended Taylor rule with the unemployment gap, the study found the gap had a positive, significant effect on the Federal Reserve's interest rate. It recommended expansionary monetary policy to stimulate the economy during recessions.

ILO (International Labour Organization) (2025) Investigated though no specific econometric techniques, but a comprehensive report that synthesizes global labor market trends and the impact of macroeconomic policies, including monetary policy. The report discusses how

global economic growth has slowed, constraining job creation opportunities, particularly in low-income countries. While acknowledging historically low global unemployment, it highlights fundamental imbalances in the labor market. It implies that monetary policy, when supportive of sustainable economic growth, can contribute to improve employment, but structural issues and global fragmentation also play a significant role.

Wali et al. (2023) Utilized panel data analysis, possibly employing structural VAR or similar models, to assess the impact of monetary policy across multiple OECD countries. This study found that a contractionary monetary policy approach, aimed at lowering output growth and inflation, concurrently exacerbated unemployment rates in OECD countries. This suggests a clear trade-off between price stability and employment objectives in developed economies, particularly during periods of economic shock.

IMF (2025) used high-frequency VAR techniques to show that monetary policy shocks quickly affect labor markets, with contractionary shocks reducing job vacancies by about 2% within 15 days across Baltic countries (2018–2024). Obiaje and Aondoakaa (2025) examined Nigeria using OLS, VAR, and ARDL models, finding that monetary policy instruments like interest rates and money supply significantly influence unemployment in both the short and long run, highlighting effective tools for reducing joblessness in developing economies.

Ndukwu and Nwala (2025). Employs Vector Autoregression (VAR) or Vector Error Correction Model (VECM) to analyze the dynamic interrelationships among inflation, unemployment, and economic growth. These models are crucial for understanding the Phillips Curve relationship and how monetary policy, in its attempt to control inflation, might impact unemployment. This research explores the classic Phillips Curve relationship in the Nigeria examining the trade-off between inflation and unemployment and its broader implications for economic growth. While not exclusively focused on monetary policies direct impact on unemployment, monetary policy is the primary tool used to manage this trade-off.

3.7 Challenges and limitations of Empirical studies

Empirical studies investigating the impact of monetary policy on misery index in Nigeria face several inherent challenges and limitations, which contribute to the mixed findings and research gaps, data quality and availability, Inconsistency. Relying solely on the exchange rate level, suffers from fundamental limitations that restrict its ability to capture the drivers of economic misery. First, the level of exchange rate is a static measure of price that fails to incorporate the crucial level of uncertainty and risk. For an economy that is heavily dependent on import like Nigeria, it is not merely the high price of foreign currency, but but the unpredictable fluctuation (Volatility) that forces business to embed large risk premium in their pricing, thereby directly fueling higher and more persistent inflation (a core component of misery index). In addition, this static approach lacks the explanatory power to model the long term decision making of investor\’s and traders. High exchange rate volatility discourage foreign direct investment (FDI) and delays domestic investment, which are key influencers of misery index. Consequently, the static exchange rate likely underestimates the true burden of foreign exchange market places on households and firms, leading to potential misspecification and weak empirical result that lack policy directions.

3.8.1 Gap in Literature and value addition

The proposed shift to exchange rate volatility (ERV) and the inclusion of key control variables such as government expenditure (GOVEX) and oil price (OLP) effectively closes the analytical gaps, adding significant value to the research. The central value addition is moving the model from a study of price to a study of risk. By using ERV, typically computed through the GARCH (1,1) model and fitting it into the ARDL model framework, the study directly quantifies the impact of financial market instability on misery index components, providing a more robust and dynamic measure of economic hardship. This allows for an analysis of both short-run impact and long-run consequences. Furthermore, the addition of the control variables ensures the model is relevant to Nigeria’s peculiar economic structure.

Oil price are exogenous shock that dictates foreign exchange flows and government revenue, thus its inclusion allow the model to properly isolate external factors and determine how much of the misery is attributable to global shocks versus domestic issues. Similarly, incorporating government expenditures is crucial for separating the effect of fiscal policy. This control variable helps ascertain whether government spending, often financed by oil revenue, effectively mitigates unemployment (reducing misery) or contribute to inflation through deficit spending (increasing misery). By simultaneously modeling ERV, government expenditures and oil price shocks, the new study offer superior policy relevance, enabling policymakers to distinguish between monetary policies needed to stabilize the currency and fiscal policies required to manage the economic fallout from oil price dependence.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

4.1 Introduction

This chapter outlines the methodology employed in this study to examine the impact of monetary policy on the misery index in Nigeria. It specifies the research method, data sources, definition and measurement of variables, model specification, and estimation techniques.

4.2 Theoretical framework

The QTM (Friedman, 1968) provides the theoretical basis for investigating the impact of monetary aggregates on the price level, which directly influences the inflation component of the misery index. Our chosen quantitative approach, involving time-series analysis (e.g., VAR models), will allow for the examination of long-run relationships and causal linkages between money supply and inflation, thereby empirically testing the QTM's applicability in the Nigerian. Furthermore, The Philips curve emphasize an inverse relationship between inflation and unemployment. In a simplified model, policy makers can exploit this trade off. An expansionary monetary policy e.g lowering interest rates, stimulate aggregate demand, leading to higher employment but also higher prices (inflation). A contractionary monetary policy on the other hand aim to curb inflation at the cost of higher unemployment. The relationship is often expressed as;

$$I_t = f(U_t, E_t, S_t)$$

Where,

I_t is the inflation rate at time t.

U_t is the unemployment rate at time t

E_t represent inflation expectations.

S_t represents supply shocks (e.g, change in oil prices).

The study is theoretically anchored on the concept of economic distress as measured by Hank Misery Index (HMI). The misery index is an economic indicator that measures the economic hardship felt by

average citizens. The original misery index (Okun’s index) sum the inflation rate and unemployment rate. The Hanke Misery Index (HMI), which is used in this study, is a modified version that typically comprises the sum of unemployment rate, inflation rate, bank lending rate, minus the annual percentage change in real GDP per capita

4.3 Data sources

The study will use secondary time-series data from 1991 to 2024, chosen to capture key monetary policy interventions and their effects on Nigeria’s economy. Data will be sourced mainly from the CBN Statistical Bulletin and the World Bank’s Development Indicators (WDI).

4.4 Model specification

The empirical model uses the log of the Misery Index (LNMI) as the dependent variable, with log of money supply (LNM2), exchange rate volatility (EXRVOL), log of government expenditure (LNGOVEX), and log of oil price (LNOLP) as explanatory variables.

4.4.1 Econometric model

$$MI = \alpha_0 + \beta_1 M2 + \beta_2 EXRV + \beta_3 GOVEX + \beta_4 OLP + \mu \text{ ----- (1)}$$

Where;

MI is the misery index

M2 is broad money supply

EXRV is Exchange rate volatility

GOVEX and OLP are the control variables

μ is the error term.

α is the intercept, while $\beta_1, \beta_2, \beta_3$ and β_4 are the coefficients

4.4.2 General ARDL model

The study uses the ARDL model, suitable for variables with mixed integration orders, including both I(0) and I(1) series.

The general ARDL (p,q₁ q₂ q₃ q₄) specification for dependent variable LNMI_t can be written as;

$$\text{LNMI}_t = \alpha_0 + \sum_{i=1}^p \beta_i \text{LNMI}_{t-i} + \sum_{j=0}^{q_1} \theta_j \text{LNM2}_{t-j} + \sum_{k=0}^{q_2} \phi_k \text{LNEXRV}_{t-k} + \sum_{l=0}^{q_3} \delta_l \text{LNGOVEX}_{t-l} + \sum_{\rho=0}^{q_4} \gamma_\rho \text{LNOLP}_{t-\rho} + \varepsilon_t \text{-----} \quad (2)$$

Where;

LNMI_t is the dependent variable.

LNM2_t , EXRV_t , LNGOVEX_t , LNOLP_t are explanatory variables.

p is the optimal lag lengths for the dependent variables

δ_l and $\beta_{i,j}$ are the short run coefficients

q_i are the optimal lag lengths for the independent variables

α_0 is the intercept and ε_t is the white noise error term.

4.5 Estimated short-run Error correction Model (ECM)

The specific model chosen for estimation, based on the Akaike information Criterion (AIC), was the ARDL (1,0,0,1,0) specification. The final estimated short-run model is the Error correction model (ECM) representation, given as;

$$\Delta \text{LNMI}_t = \alpha_0 + \beta_1 \Delta \text{LNM2}_t + \beta_2 \text{EXRV}_t + \beta_3 \text{LNGOV}_t + \beta_4 \text{LNOLP}_t + \gamma \text{ECM}_{t-1} + \varepsilon_t \text{-----} \quad (3)$$

Where,

Δ denotes the first difference operation

ECM_{t-1} is the error correction term derived from the lagged residuals of the long run equation

γ is the speed of adjustment

ε_t is a white noise error term

4.6 Econometric Techniques

A series of econometric techniques were employed to analyze the data and test the research hypotheses.

4.6.1 Descriptive Statistics

Summary statistics—mean, median, standard deviation, skewness, and kurtosis—were used to describe the data, while the Jarque-Bera test assessed normality.

4.6.2 Unit Root Test

The Augmented Dickey-Fuller (ADF) test was used to check stationarity at levels and first differences, with the null hypothesis assuming the presence of a unit root (non-stationarity).

4.6.3 Correction Analysis

The Error Correction Model (ECM) is used for cointegrated, non-stationary variables. It captures short-run dynamics while the error correction term (ECT) shows how quickly variables return to long-run equilibrium after a shock.

4.6.4 ARDL Bounds Test for Cointegration

The bounds test was used to check for a long-run relationship among the variables, comparing the F-statistic to critical upper and lower bounds to determine cointegration.

4.6.5 Diagnostic Tests

The reliability and stability of the model were checked using several diagnostic tests:

Table 4.1 Definitions of variables

S/N	Variable notations	Definition/ measurement and Application	Data source
1	MI (Misery index)	Measure of economic distress experienced by citizens. It's an indicator of overall economic health. It is measures by adding inflation, unemployment, bank lending rate less percentage change in real GDP per capita. It is used to gauge the economic well-being of the population and to access the impact of monetary policies	World Bank (2025)
2	M2 (Broad money supply)	The total volume of money in circulation in the economy. It includes narrow money (M1), which is currency in circulation plus demand, saving and time deposit. It is use by CBN to forecast and manage inflation	CBN (2024)
3	ERRV (Exchange rate volatility)	The fluctuation or tendency for the value of the Nigeria Naira to appreciate against other currency such as the US dollar.	CBN (2024)
4	OLP (Oil price)	It's a critical determinant of Nigeria's fiscal stability and macroeconomic performance due to the country heavy reliance on oil revenue. It is typically measured as the per barrel price.	OPEC(2025)
5	GOVEX(Government expenditure)	The total spending by the government on goods, services and transfers. It is measured in monetary terms, often as percentage of GDP. It CBN/WDI is a tool use to used to achieve macroeconomic goals.	CBN(2024)

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION OF FINDINGS

5.1 Descriptive Statistics

This section presents the descriptive statistics of the variables used to examine the impact of monetary policy on the Misery Index in Nigeria using the Hanke Misery Index (HMI) framework. Descriptive statistics are vital in the sense that it summarizes the data's characteristics (Mean and variance) and uses underlying distributions (Skewness, Kurtosis), providing a necessary base before presenting complex inferential results. The variables include the Misery Index (MI), Money Supply (M2), Exchange Rate Volatility (EXRV), Government Expenditure (GOVEX), and Oil Price (OLP). The descriptive measures summarized in Table 5.1 help to understand the central tendencies, dispersion, and distributional characteristics of the data before conducting further econometric analysis.

Table 5.1: Descriptive Statistics of Variables

Statistic	MI	M2	EXRV	GOVEX	OLP
Mean	38.20988	17625.22	0.087672	5014.921	59.68594
Median	32.33877	10220.93	0.094600	3346.905	57.89000
Maximum	99.85145	88565.54	0.096670	23840.62	106.3400
Minimum	22.44730	198.4792	0.000794	160.8932	19.20000
Std. Dev.	18.24711	21610.80	0.019389	5796.006	27.13936
Skewness	2.300357	1.572576	-3.411711	1.757833	0.249564
Kurtosis	7.386372	5.209362	14.59862	5.659435	1.784544
Jarque-Bera	53.87578	19.69768	241.4495	25.91001	2.301948

Probability	0.000000	0.000053	0.000000	0.000002	0.316328
Sum	1222.716	564007.1	2.805500	160477.5	1909.950
Sum Sq.	10321.66	1.45E+10	0.011654	1.04E+09	22832.89
Dev.					
Observations	32	32	32	32	32

Source: Author's computation (2025) using EViews 13

Table 5.1 offer initial insights into the behaviour of the variables during the period under review. The Misery Index (MI) has a mean value of 38.21, indicating a generally high level of economic discomfort in Nigeria. The wide range between its minimum (22.45) and maximum (99.85) values reflects significant fluctuations in macroeconomic performance. Its high positive skewness (2.30) and excess kurtosis (7.39) imply a non-normal distribution with a long right tail, indicating the presence of extreme episodes of economic distress.

Money Supply (M2) shows a mean of 17,625.22, with a large standard deviation (21,610.80) suggesting strong variations in monetary policy actions over the years. The variable is positively skewed (1.57) and exhibits leptokurtic behaviour (kurtosis = 5.21), indicating the presence of outliers consistent with periods of rapid monetary expansion.

Exchange Rate Volatility (EXRV) has a low average value of 0.0877, implying generally moderate exchange-rate fluctuations. However, its extremely high kurtosis (14.60) and strong negative skewness (-3.41) suggest periods of sharp instability driven by external shocks or policy changes. The Jarque-Bera probability of 0.000000 confirms significant deviation from normality.

Government Expenditure (GOVEX) also exhibits substantial variability, as reflected in its mean (5,014.92) and high standard deviation (5,796.01). The positive skewness (1.76) and high kurtosis (5.66) signify occasional spikes in government spending, likely associated with fiscal expansion, political cycles, or policy reforms.

Oil Price (OLP) has a mean of 59.69, with moderate variation over the period. Its skewness (0.25) and kurtosis (1.78) are close to those of a normal distribution, and the Jarque–Bera probability (0.316) suggests that oil prices are approximately normally distributed, unlike the other variables.

Overall, the Jarque–Bera statistics indicate that all variables except oil price deviate significantly from normality. This characteristic highlights the presence of structural changes, extreme values, or economic shocks in the Nigerian economy and underscores the importance of using econometric techniques robust to non-normal distributions in the subsequent analysis.

5.2 Unit Root Test Results

The Augmented Dickey-Fuller (ADF) test at 5% significance was used to determine the integration order of each variable, applied at levels and first differences with a constant and lags selected via SIC. The null of a unit root was rejected if the ADF statistic was more negative than the 5% critical value, guiding the choice of estimation method.

Table 5.2: Summary of ADF Unit Root Test Results

Variable	ADF Statistic (Level)	5% Critical Value	Stationary at Level?	ADF Statistic (1st Diff.)	5% Critical Value	Stationary at 1st Diff.?	Order of Integration
LNMI	-2.036998	-2.954021	Not stationary	-5.864028	-2.957110	Stationary	I(1)
LNMI2	-1.183959	-2.957110	Not stationary	-3.236119	-2.957110	Stationary	I(1)
EXRV	-3.098295	-2.960411	Stationary	-	-	-	I(0)
LNGOVEX	-2.766758	-2.957110	Not stationary	-5.261548	-2.960411	Stationary	I(1)
LNOLP	-1.563336	-2.954021	Not stationary	-5.937358	-2.960411	Stationary	I(1)

Source: Author’s computation (2025) using EViews 13

Table 4.2 shows that LNMI, LNM2, LNGOVEX, and LNOLP are non-stationary at levels but become stationary after first differencing (I(1)), while EXRV is stationary at level (I(0)). The mix of I(0) and I(1) variables confirms that the ARDL model is suitable, since it handles variables with different integration orders as long as none is I(2).

5.3 Correlation Analysis

Correlation analysis was performed to assess the strength and direction of relationships among the explanatory variables and check for potential multicollinearity. Table 5.3 presents the pairwise correlations for LNM2, EXRV, LNGOVEX, and LNOLP.

Table 5.3: Correlation Matrix of Explanatory Variables

Variables	LNM2	EXR_VOL	LNGOVEX	LNOLP
LNM2	1.0000	0.3588	0.9875	0.7760
EXR_VOL	0.3588	1.0000	0.3439	0.2381
LNGOVEX	0.9875	0.3439	1.0000	0.7611
LNOLP	0.7760	0.2381	0.7611	1.0000

Source: Author's computation (2025) using EViews 13

The correlation analysis shows very strong positive relationships between Money Supply (LNM2) and Government Expenditure (LNGOVEX, 0.9875), and between these variables and Oil Price (LNOLP, 0.7760 and 0.7611), reflecting coordinated fiscal-monetary actions and Nigeria's reliance on oil revenue. Exchange Rate Volatility (EXRV) has weaker correlations (0.2381–0.3588) with other variables, indicating relative independence. These results highlight the need to address potential multicollinearity in the model.

5.4 ARDL Bounds Test for Cointegration

The ARDL Bounds Test was used to check for a long-run relationship among LNM2, EXR_VOL, LNGOVEX, and LNOLP. Suitable for mixed I(0) and I(1) variables, the test (Case 2: restricted constant, no trend) with 32 observations tested the null that no long-run relationship exists.

Table 5.4: ARDL Bounds Test Result at 5% Significance Level (Case 2, k = 4)

Test Statistic	Value
F-statistic	3.099906
5% Lower Bound (I(0))	2.947
5% Upper Bound (I(1))	4.088

Source: Author's computation (2025) using EViews 13

The ARDL Bounds test shows an F-statistic of 3.10, above the lower bound but below the upper bound, indicating no long-run cointegration among Money Supply, Exchange Rate Volatility, Government Expenditure, and Oil Price. Therefore, the ARDL static model is interpreted at levels, focusing on short-run associations rather than long-run dynamics.

5.5 ARDL Static Model Estimation

Following the ARDL Bounds Test, which indicated the absence of a long-run relationship among the variables, the ARDL static model was estimated to analyze the impact of monetary and fiscal variables on the Misery Index (LNMI) in Nigeria. The model was estimated using data from 1993 to 2024, including 32 observations. The ARDL procedure automatically selected lags for the dependent variable and regressors, with a maximum of 2 lags considered. Model selection was based on the Akaike Information Criterion (AIC), resulting in the choice of ARDL(1,0,0,1,0) with a restricted constant and no deterministic trend (Case 2).

Table 5.5: ARDL Static Model Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMI(-1)	0.627820	0.124686	5.035199	0.0000
LNMI2	0.394367	0.158899	2.481871	0.0201
EXRV	-2.425201	2.313996	-1.048058	0.3046
LNGOVEX	0.179388	0.214087	0.837921	0.4100
LNGOVEX(-1)	-0.632760	0.245961	-2.572602	0.0164
LNOLP	-0.228820	0.118316	-1.933978	0.0645
C	2.460153	0.804897	3.056483	0.0053

Model Diagnostics

R-squared = 0.7425
Adjusted R-squared = 0.6807
Standard error of regression = 0.2013
F-statistic = 12.016 (p = 0.000002)
Durbin-Watson = 1.666

Source: Author's computation (2025) using EViews 13

The ARDL model (Table 4.5) shows that lagged LNMI positively and significantly affects current economic distress (0.6278, $p < 0.01$), indicating persistence. Money Supply (LNMI2) increases misery (0.3944, $p = 0.0201$), while Exchange Rate Volatility and current Government Expenditure are insignificant. Lagged government spending reduces misery (-0.6328, $p = 0.0164$), and higher oil prices have a marginally negative effect ($p = 0.0645$). The model fits well ($R^2 = 0.7425$; $F = 12.016$, $p < 0.01$) with no serious autocorrelation (Durbin-

Watson = 1.666). Overall, monetary expansion worsens economic hardship, past government spending eases it, and oil prices have a modest stabilizing effect, offering key policy insights.

5.6 Diagnostic Tests

Several diagnostic tests were conducted to ensure the ARDL model’s reliability, including checks for multicollinearity, serial correlation, heteroscedasticity, model specification, normality, and coefficient stability.

5.6.1 Multicollinearity Test (Variance Inflation Factor, VIF)

Before analyzing regression results, it is essential to check for high correlations among explanatory variables, which can bias estimates. The Variance Inflation Factor (VIF) is typically used for this assessment.

Table 5.6.1: Multicollinearity Test (VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LNMI(-1)	0.015547	159.4685	1.7009
LN2	0.025249	1554.277	67.6394
EXRV	5.354576	34.0538	1.5406
LNGOVEX	0.045833	2265.235	66.4099
LNGOVEX(-1)	0.060497	2868.882	94.3087
LNOLP	0.013999	177.5589	2.6582
C	0.647859	511.7931	NA

Source: Author’s computation (2025) using EViews 13.

As shown in Table 5.6.1, most centered VIF values are well above 5, particularly for LN2, LNGOVEX, and LNGOVEX(-1), indicating high multicollinearity. This may inflate the

standard errors and make individual coefficient estimates less reliable, although the overall model remains useful for prediction.

5.6.2 Serial Correlation Test

The Breusch-Godfrey LM test was used to check for serial correlation in the residuals.

Table 5.6.2: Breusch-Godfrey Serial Correlation Test

Test	Statistic	Prob.
F-statistic	1.318980	0.2869
Obs*R-squared	3.292568	0.1928

Source: Author's computation (2025) using EViews 13.

As shown in Table 4.6.2, the p-values are greater than 0.05, indicating no evidence of serial correlation in the model residuals.

5.6.3 Heteroscedasticity Test

The Breusch-Pagan-Godfrey test was used to check for heteroscedasticity.

Table 5.6.3: Heteroscedasticity Test

Test	Statistic	Prob.
F-statistic	3.217370	0.1760
Obs*R-squared	13.94303	0.3030

Source: Author's computation (2025) using EViews 13.

As depicted in Table 4.6.2, since the p-values exceed 0.05, the null hypothesis of homoskedasticity cannot be rejected. The residuals exhibit constant variance.

5.6.4 Model Specification Test

The Ramsey RESET test checks for omitted variables or incorrect functional form.

Table 5.6.4: Ramsey RESET Test

Test	Value	Df	Probability
F-statistic	2.536049	(2, 23)	0.1011
Likelihood ratio	6.377021	2	0.4120

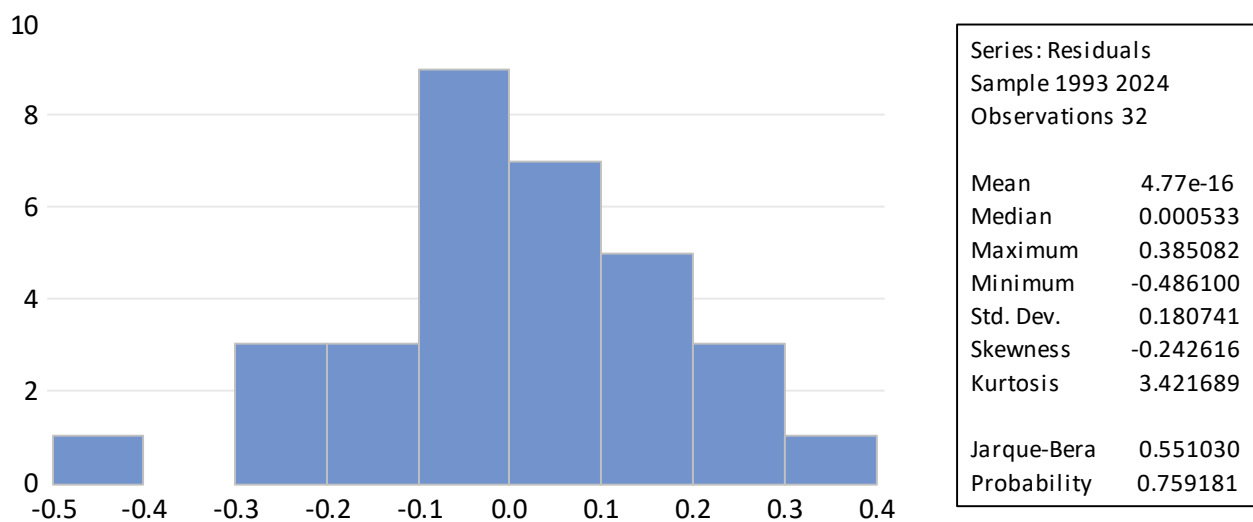
Source: Author’s computation (2025) using EViews 13.

As shown in Table 4.6.4, the p-values are greater than 0.05, suggesting the model is correctly specified and no significant omitted variables are present.

5.6.5 Normality and Stability Tests

The Jarque-Bera (JB) test checked residual normality, while the CUSUM test assessed coefficient stability over time.

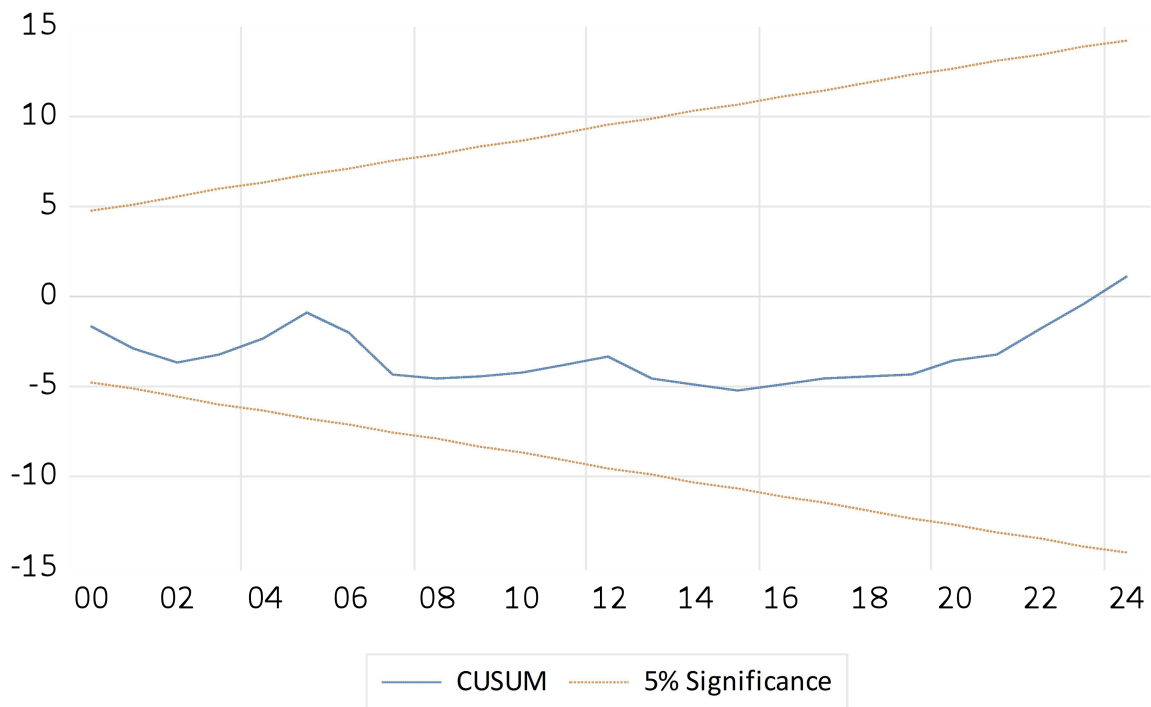
Figure 5.1: Normality Test



Source: Author’s (2025) using EViews 13.

As depicted in Figure 4.1, JB = 0.551030, p-value = 0.75918. Since the p-value > 0.05, residuals are normally distributed.

Figure 5.2: Stability Test (CUSUM Test)



Source: Author's (2025) using EViews 13.

Figure 4.2 shows the CUSUM test line stays within the bounds, indicating stable coefficients. Overall, despite some multicollinearity, the model passes tests for serial correlation, heteroscedasticity, specification, residual normality, and stability, confirming the reliability of the ARDL results.

5.7 Discussion of Findings

The study analyzed the impact of monetary policy and exchange rate volatility on Nigeria's Misery Index (LNMI) using the ARDL model. Results show that money supply (LNM2) significantly increases the Misery Index (0.3944, $p = 0.0201$), rejecting the null hypothesis and indicating that monetary expansion fuels inflation and economic distress. In contrast, exchange rate volatility (EXRV) has a negative but statistically insignificant effect (-2.4252, $p = 0.3046$), so the null hypothesis cannot be rejected, suggesting that other factors influence economic hardship more strongly.

The lagged Misery Index (LNMI(-1)) is positive and highly significant (0.6278, $p < 0.001$), highlighting the persistence of economic distress. Lagged government expenditure (LNGOVEX(-1)) reduces misery significantly (-0.6328, $p = 0.0164$), while current expenditure is not significant, indicating fiscal interventions take time to impact welfare. Oil prices (LNOLP) have a marginally negative effect (-0.2288, $p = 0.0645$), reflecting Nigeria's reliance on oil revenue but insufficient alone to explain variations in misery.

Overall, the model explains 74% of the variation in the Misery Index ($R^2 = 0.7425$) and is statistically significant ($F = 12.016$, $p < 0.001$). The findings emphasize that money supply drives economic distress, exchange rate volatility has limited effect, and coordinated monetary and fiscal policies, along with broader economic measures, are critical for alleviating hardship in Nigeria.

5.8 Policy Implications

The study's findings offer key policy insights for Nigeria. The positive effect of money supply on the Misery Index suggests that excessive credit expansion worsens economic distress, highlighting the need for cautious, targeted monetary policy. Exchange rate volatility, though not significant in the short run, should be monitored alongside broader fiscal and monetary measures. Lagged government spending reduces misery, indicating that timely, targeted fiscal interventions—especially on social welfare and employment—can alleviate economic hardship. The slight negative impact of oil prices emphasizes Nigeria's vulnerability to global oil shocks, underlining the importance of economic diversification and stabilizing funds. Since no long-run cointegration was found, short-run stabilization measures are crucial. Overall, coordinated monetary policy, fiscal management, and economic diversification are essential to reduce economic distress and improve citizens' welfare.

5.9 Evaluation of research hypothesis

The analysis centers on the short-run dynamics using the ECM, as long-run cointegration was inconclusive. Two null hypotheses were tested, with rejection occurring if the p-value was \leq 5%; otherwise, the null was not rejected.

Hypotheses 1 (H_{01}): An increase in money supply has no significant impact on misery index in Nigeria.

Conclusion: The Money Supply (LNM2) coefficient is positive (0.3944) and significant at 5% ($p = 0.0201$). This indicates that monetary expansion raises the Hanke Misery Index in the short run, confirming that higher money supply worsens economic distress. The null hypothesis of no effect is therefore rejected.

Hypothesis 2 (H_{02}): An increase in exchange rate volatility has no significant impact on misery index in Nigeria.

Conclusion: The Exchange Rate Volatility (EXRV) coefficient is negative (-2.4252) but insignificant ($p = 0.3046$). This supports the null hypothesis, showing that short-term exchange rate fluctuations do not significantly affect the Hanke Misery Index in Nigeria, so the null is not rejected.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND POLICY RECOMMENDATIONS

6.1 Introduction

This chapter summarizes the study, presents conclusions, and offers policy recommendations. It examined the impact of monetary policy and exchange rate volatility on Nigeria's Misery Index (Hanke Index), focusing on LNM2, EXR_VOL, LNGOVEX, and LNOLP. The analysis used unit root tests, correlation analysis, ARDL bounds testing, and ARDL modeling to assess short- and long-run effects.

6.2 Summary of findings

The study's findings reveal a positive and significant relationship between money supply and the Misery Index in Nigeria, indicating that increases in money supply worsen economic distress, which confirms that unchecked monetary expansion can trigger inflationary pressures. While exchange rate volatility had a negative but statistically insignificant coefficient in the ARDL model, suggesting that short-run fluctuations do not meaningfully affect economic distress, other macroeconomic factors like fiscal policy and money supply are likely more central. Lagged government expenditure was found to have a significant negative impact on the Misery Index, demonstrating that timely, sustained, and strategic public spending can reduce economic distress, although the effects are not immediate. Oil prices were negatively associated with the Misery Index, suggesting that increased oil revenues can alleviate economic distress, but this effect was only marginally insignificant at the 5% level, reflecting Nigeria's partial reliance on oil. Furthermore, the lagged value of the Misery Index was positive and highly significant, underscoring the persistence and cumulative nature of economic hardship over time. A crucial finding is the absence of long-run cointegration, as the ARDL bounds test F-statistic was below the upper bound at the 5% level, which implies that policy interventions should prioritize short-run stabilization rather than long-term equilibrium adjustments.

6.3 Conclusion

Based on the empirical evidence, the study concludes that monetary policy, particularly the growth of money supply, is a key determinant of economic distress in Nigeria. Excessive money supply increases the Misery Index, while short-run exchange rate volatility does not significantly influence economic hardship. Fiscal policy, through timely government expenditure, can reduce economic distress, though its effects materialize over time. Oil price fluctuations also influence economic welfare but are not sufficient alone to stabilize the economy.

The lack of long-run cointegration suggests that Nigeria's Misery Index is not tied to a stable long-term relationship with key macroeconomic variables. Consequently, managing economic distress requires proactive short-term policy interventions rather than relying on automatic long-term adjustments. The findings underscore the need for coordinated monetary and fiscal policies, prudent management of oil revenues, and economic diversification to reduce vulnerability to external shocks.

6.4 Policy recommendation

The Central Bank of Nigeria should adopt a prudent monetary policy by controlling monetary expansion to avoid excessive inflation, which directly increases economic distress. Strategic fiscal interventions are advised, where government expenditure should be timely, sustained, and targeted towards programs that improve social welfare, stimulate employment, and support household incomes. Given the partial influence of oil prices, economic diversification is recommended to reduce reliance on oil revenues by promoting other sectors like agriculture, manufacturing, and services, thereby reducing the economy's sensitivity to oil price shocks. Since there is no long-run cointegration, policymakers should focus on short-run stabilization policies, implementing immediate and responsive measures to manage inflation, fiscal pressures, and economic misery. Although exchange rate volatility was

insignificant in the short run, its continued monitoring and integration with broader macroeconomic strategies are still important for overall stability. Finally, effective reduction of economic distress requires policy coordination across monetary, fiscal, and structural dimensions, with synergistic implementation ensuring maximum impact on reducing the Misery Index.

6.5 Suggestions for further research

Future research could expand on this study by exploring:

1. The impact of structural reforms and governance indicators on the Misery Index.
2. Sectoral contributions to economic distress, especially the role of agriculture and manufacturing.
3. The dynamic interactions between global economic shocks and domestic macroeconomic policies on the Misery Index.

REFERENCES

- Abdulkareem, S.K., Iyaija, G. t., & Adedayo, T.S (2025). Monetary policy, inflation and economic growth in Nigeria. *Open Journal of Business and Mnagement*, 13(2), 801-815.
- Abdullahi, I., & Umar, Y. (2025). Effectiveness of monetary policy on unemployment in Nigeria. *Journal of Research in Business and Management*, 13(4), 164-171.
- Adegbite, F. O., & Alabi, O. A. (2013). Monetary policy instruments and economic growth in Nigeria: An Empirical Evaluation. *International journal of academic research in business and social sciences*, 3(10), 1-13.
- Adeosun, O. A., Akingboye, O. A., & Ajala, O. A. (2023). monetary policy, inflation and economic growth in Nigeria. *Open Journal of Business and Management*, 13(2), 705-722.
- Ajayi, I. (1999). Evolution and functions of central banks. *Central Bank of Nigeria Economic and Financial Review*, 37(4), 11-27.
- Akande, E. O., Dandaura, J. D., & Akanni, E. (2024). Monetary policy instruments and inflation in Nigeria: a revisit of FAVAR. *International Journal of Economic Policy Studies*, 18(1), 1-36.
- Akinluyi, V. O., & Abiola, R. O. (2023). effect of monetary policy on food inflation in Nigeria: A Nardl Structural Approach. *ADAM- ADAM Journal of Management, Economics and Social Sciences*, 13(5), 1-15.
- Akosile, S. O., & Adedoyin, A. O. (2016). Monetary policy and economic growth in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 6(1), 164-177.
- Alalade, Y. S. & Fagbemi, F. (2018). The effect of broad money supply on the misery index in Nigeria. *Journal of Economics and Sustainable Development*, 9(12), 1-10.
- Anyanwu, J. C & Oaikhenan, H. E. (1995). Modern macroeconomic theory and application in Nigeria. Onitsha: *Joanuee publishers*.
- Anyanwu, J. C. (2014). An empirical investigation of the relationship between inflation and poverty in Nigeria. *Joanee Publishers*.
- Asekunowo, A. & Olaiya, A. (2016). The impact of monetary policy rates on the misery index in Nigeria. *CBN Journal of Applied Statistics*, 7(2), 49–75.
- Bank-Ola, R. F. (2021). Monetary policy instruments and price stability in Nigeria: An ARDL bound testing approach. *International Journal of Management, Social Sciences, Peace and Conflict Studies*, 6(1), 473-485.

- Benue State University. (n.d.). *Monetary Policy Rate and Performance of the Nigerian Economy: A Simulation Analysis*. Retrieved from <https://bsum.edu.ng/journals/jesr/vol10n1/files/13.pdf>
- Bernanke, B. S., Laubach, T., Mishkin, F. S., & Posen, A. S. (1999). *Inflation targeting: lessons from the international experience*. Princeton University Press.
- Bredino, S., Faithful, C., & Aguwamba, C. A. (2025). Empirical analysis of monetary policy & unemployment in Nigeria: An econometric Approach. *International Journal of Social Science And Human Research*, 8(1).
- CBN Digital Commons. (n.d.). *Impact of monetary policy on inflation rate in Nigeria: Vector Autoregressive Analysis*. Retrieved from <https://dc.cbn.gov.ng/cgi/viewcontent.cgi?article=1046&context=bullion>
- Central Bank of Nigeria (CBN) Statistical bulletin (various issues). Abuja, Nigeria.
- Central Bank of Nigeria (CBN). (2023). *Monetary policy review*. Various issues.
- Central Bank of Nigeria (CBN). (n.d.). *Monetary Policy and Unemployment in Nigeria: Is there a Dynamic Relationship?* Retrieved from https://www.cbn.gov.ng/out/2016/sd/monetary%20policy%20and%20unemployment%20in%20nigeria_is%20there%20a%20dynamic%20relationship.pdf
- Central Bank of Nigeria (CBN). (n.d.). *Monetary Policy Decisions*. Retrieved from <https://www.cbn.gov.ng/MonetaryPolicy/decisions.html> (Accessed July 13, 2025).
- Central Bank of Nigeria. (2025, February). *Monetary Policy Communique No. 156*. (Available on cbn.gov.ng).
- Chukwuemeka, N. (2021). Monetary policy and Unemployment rate in Nigeria: An empirical investigation. *World Journal of Advanced Research and Reviews*, 15(03), 248-255.
- Clement, I. E., Cyril, O. O. Imoagwu, C. P., & Ejefobihi, U. F. (2021). Monetary policy and Inflation control: The Case of Nigeria. *European Journal of Management and Marketing Studies*, 6(2), 128-149.
- Effiong, U., Okon, J., & Arinze, N. P. (2022). The exasperating economic misery in Nigeria: *Journal of Economics and Allied Research*.
- Friedman, M. (1963). *Inflation: Causes and Consequences*. Asia Publishing House.
- Friedman, M. (1968). The role of monetary policy. *The American Economic Review*, 58(1), 1-17.
- Gbosi, A. N. (2015). Monetary policy and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 6(7), 170-179.
- George-Anokwuru, C. (2023). monetary policy and misery index in nigeria. *European Journal of Economic and Financial Research*. Retrieved from <https://oapub.org/soc/index.php/EJEFR/article/view/1494>

- George-Anokwuru, N. A. (2023). monetary policy and misery index in Nigeria. *European Journal of Economic and Financial Research*, 6(3), 115-132.
- George-Anokwuru, C.C. (2022). Fiscal policy and misery index in Nigeria. *International Journal of Economics, Commerce and Management*, 10(6), 26-42.
- Goodhart, C. A. E. (2007). The management of liquidity. *Central Bank of Nigeria Economic and Financial Review*, 45(3), 1-16.
- Hanke, S. H. (2021, March 23). *Hanke's Annual Misery Index: 2020*. Cato Institute.
- Hanke, S. H. (2024, May 10). *The World's Most Miserable Countries: The 2023 Hanke-Krueger Misery Index*. Cato Institute.
- Henry, E. A & Sbo, A.M. (2020). Impact of monetary policy on inflation rate in Nigeria: Vector Autoregressive Analysis, *Central bank of Nigeria Bullion: 44 (6) 78-9*.
- ILO (International Labour Organization). (2025). [Full title of the report not provided in snippet].
- Inam, U. (2005). *Monetary policy and economic development in Nigeria*. Investopedia. (n.d.). *Misery Index*. Retrieved from <https://www.investopedia.com/terms/m/miseryindex.asp>
- Keynes, J. M. (1936). *The general theory of employment, interest, and money*. Macmillan.
- Mankiw, N. G., & Romer, D. (Eds.). (1991). *New Keynesian Economics, Volume 1: Imperfect Competition and Sticky Prices*. MIT Press.
- Mishkin, F. S. (2013). *The economics of money, banking, and financial markets* (10th ed.). Pearson.
- Mishkin, F. S. (2012). *The economics of money, banking, and financial markets* (10th ed.). pearson education.
- Mondopoli. (2024, February 20). *Nigeria ranks 16th on Hanke's annual misery index*.
- Nairametrics. (2023, June 20). *Hanke's Misery Index 2022: Nigeria ranks 15th*.
- National Bureau of Statistics (NBS). (2017). *Nigerian Statistical Bulletin*.
- National Bureau of Statistics (NBS). (2021). *Labour force statistics: unemployment and underemployment report*.
- National Bureau of Statistics (NBS). (2024, May 17). *Consumer price index (CPI) and inflation report April 2024*.
- Ndukwu, C. E., & Nwala, M. A. (2025). Tradeoff between inflation and unemployment: implications on the growth of the Nigerian economy. *Multidisciplinary global economic journal*, 1(1). Nigerian economic summit group. (2024). *Monetary policy and inflation in Nigeria*. NESG Publication. (Accessed via nesgroup.org).

- Obiaje, E., & Aondoakaa, E. (2025). Impact of monetary policy on unemployment reduction in Nigeria: 2000-2023. *International Journal of Research and Innovation in Social Science* 9(15), 322-333.
- Okafor, E. & Isiaka, T. (2019). The Phillips curve and the conduct of monetary policy in Nigeria. *International Journal of Development and Economic Sustainability*, 8(2), 11-25.
- Okafor, I. G., & Isiaka, O. M. (2019). Monetary policy and economic growth in Nigeria: An Empirical Analysis. *Journal of Economics, Management and Trade*, 25(4), 1-14.
- Okeke, J. C. & Chukwu, K. O. (2021). Effect of monetary policy on the rate of Unemployment in Nigeria in Nigerian Economy (1986-2018). *Journal of Global Accounting* 7(1), 1-13
- Okotori, T., & Gbalam, E. (2020). CBN monetary policy and inflation nexus in Nigeria: an empirical approach. *MPRA paper No. 110523*. University library of Munich, Germany.
- Okun, A. M. (1970). *The political economy of prosperity*. W. W. Norton & Company.
- Parikh, A., & Williams, R. (1998). The effect of exchange rate variability on foreign trade: A literature review. *Journal of Economic Surveys*, 12(1), 1-32.
- Phelps, E. S. (1968). Money-wage dynamics and labor-market equilibrium. *Journal of Political Economy*, 76(4, Part 2), 678-711.
- Phillips, A. W. (1958). The relation between unemployment and the rate of change of money wage rates in the United Kingdom, 1861–1957. *Economica*, 25(100), 283-299.
- Pigou, A. C. (1933). *The Theory of unemployment*. Macmillan.
- Po-Chin, W., Chia-Ying, L., & Po-Ting, L. (2014). An application of misery index on economic Policy in Taiwan. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 8(1), 1-5.
- Proshare. (2021, March 23). *Nigeria's misery index continues to rise as inflation hits 17.33%*.
- Sargent, T. J., & Wallace, N. (1975). 'Rational' expectations, the optimal monetary instrument, and the optimal money supply rule. *Journal of Political Economy*, 83(2), 241-254.
- Shapiro, C., & Stiglitz, J. E. (1984). Equilibrium unemployment as a worker *discipline* device. *The American economic Review*, 74(3), 433-444.
- Shigoka, T. (1994). A Note on woodford's conjecture: Constructing stationary sunspot equilibria in a continuous time model. *Journal of Economic Theory*, 64: 531-540.
- Soludo, C. C. (2004). *Consolidating the banking industry in Nigeria: The Role of monetary Policy*. Central bank of Nigeria.

- Sveriges Riksbank. (2025, March). Monetary Policy Report March 2025. (Available on riksbank.se). Scientific & Academic publishing. (n.d.). monetary policy and inflation in Nigeria. Retrieved from <http://article.sapub.org/10.5923.j.ijfa.20160502.01>.
- The Nation Online. (2025, February 2). *IMF Backs CBN's tight monetary policy*.
- Tobin, J. (1996). Monetary policy: Recent theory and practice. *Cowles Foundation for Research in Economics, Yale University*.
- Tom-Ekine, G. (2011). Monetary policy and economic performance in Nigeria. *African Journal of Social Sciences, 1(2)*, 1-15.
- Twinoburyo, E. N., & Odhiambo, N. M. (2018). monetary policy and economic growth: A literature review. *Journal of Economic and Financial Sciences, 11(1)*, 1-14.
- Uchedu, M. J. (2009). The Role of monetary policy in controlling inflation in Nigeria. *international journal of academic research in business and social sciences, 1(2)*, 52-64.
- Ujuju, L. E., & Ly, D. (2021). Macroeconomic analysis of the relationship between monetary policy instruments and inflation in Nigeria. *European Academic Journals, 3(5)*, 112-125.
- Wali, I., Khan, R., & Rashid, M. M. (2023). Examining monetary policy measures and their Impacts during and after the COVID Era: *OECD Perspectives*. *Economies, 12(6)*, 154.
- World Bank. (Various Years). World Development indicators (WDI) Database. Retrieved from <https://data.worldbank.org/indicator>
- Zajac, A., & Osińska, J. (2024). Examining impact of inflation and inflation volatility on economic growth: Evidence from *European Union Economies*. *Economies, 13(2)*, 31
- Zhou, Y. (2021). The Association between monetary policy and unemployment in the United States: An Extended taylor rule approach. *Journal of Central Banking Theory and Practice, 10(1)*, 101-118.