Monetary Policy, Corruption and Financial Development in Nigeria

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Certification

This is to certify that Azeez Adebanjo WAHAB with the matriculation number LCU/PG/003159 carried out this research work titled: Monetary Policy, Corruption and Financial Development in Nigeria in the Department of Management & Accounting, Faculty of Management & Social Sciences, Lead City University, Ibadan, Nigeria for the award of Doctor of Philosophy Degree (PhD) in Finance and this has not been previously submitted.

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Dedication

"This work is dedicated to God Almighty, whose guidance, strength, and grace have made the realization of this goal possible."

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Abstract

This study examines the complex relationships between monetary policy, corruption, and financial development in Nigeria, with a specific focus on four key dimensions: financial access, depth, efficiency, and stability. Despite various reform efforts, Nigeria's financial development remains hindered by persistent macroeconomic instability and widespread institutional corruption, which distort the transmission mechanisms of monetary policy and impede sustainable economic growth. The study is grounded in the Monetary Transmission Mechanism Theory and complemented by the New Keynesian Theory, Institutional Theory, and the Endogenous Growth Theory. This study employed the ex post facto research design. It utilised secondary time-series data spanning from 2013 to 2023, sourced from the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), the World Bank's Global Financial Development Database, and Transparency International's Corruption Perceptions Index. Analytical techniques include descriptive statistics, Ordinary Least Squares (OLS) regression, and Granger causality tests, complemented by diagnostic checks for heteroscedasticity, autocorrelation, and normality, to analyse relationships between variables using E-VIEW software. The results from the findings show that monetary policy has a significant influence on financial access, with the model explaining substantial variation ($R^2 = 0.9841$, Adj $R^2 = 0.9618$, $F = 44.134$, $p < 0.05$). Similarly, monetary policy plays a key role in financial depth ($R = 0.960$, $R^2 = 0.960$, Adj $R^2 = 0.940$, $F = 47.624$, $p < 0.05$) and financial efficiency ($R = 0.8293$, $R^2 = 0.8293$, Adj $R^2 = 0.6586$, $F = 4.859$, $p < 0.05$). Corruption significantly affects financial access ($R^2 = 0.939$, Adj $R^2 = 0.927$, $F = 77.493$, $p < 0.05$) and efficiency ($R^2 = 0.860$, Adj $R^2 = 0.814$, $F = 18.469$, $p < 0.05$), but its impact on financial depth is negligible ($R^2 = 0.209$, Adj $R^2 = 0.051$, $F = 1.322$, $p > 0.05$). The exchange rate, as a control variable, also significantly influences financial development ($R^2 = 0.872$, Adj $R^2 = 0.668$, $F = 5.275$, $p < 0.05$). Granger causality tests reveal that financial development causes corruption ($F = 13.777$, $p = 0.0037$) and money supply affects inflation ($F = 4.133$, $p = 0.065$) and corruption ($F = 7.824$, $p = 0.016$). These results emphasise the dynamic interplay between monetary policy, corruption, and exchange rate stability in shaping financial development outcomes. The study's findings conclude that monetary policy, corruption, and exchange rate dynamics have a significant impact on financial development in Nigeria. Monetary policy affects access, depth, and efficiency, while exchange rate fluctuations influence financial stability. Corruption hampers access and efficiency but has minimal effect on depth. The study emphasises the importance of robust governance and targeted policies in promoting sustainable financial development. Based on the findings, it is recommended that Nigerian policymakers should tailor monetary policies to improve financial access, depth, and stability while prioritising anti-corruption efforts, especially within financial institutions. The Central Bank should monitor inflation and exchange rates to ensure stability. Exchange rate management should be incorporated into monetary policy to foster growth alongside ongoing institutional reforms to reduce corruption and support financial development.

Keywords: Monetary Policy, Corruption, Financial Development, Financial Access, Depth

Word Count: 495

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Abbreviation	Meaning
MPR	Monetary Policy Rate
OLS	Ordinary Least Squares
VIF	Variance Inflation Factor

Chapter One

Introduction

1.1 Background to the Study

The global financial landscape has experienced a significant transformation in the past few years, featuring a nuanced shift away from purely free market systems toward more hybrid and regulated frameworks, especially following the pandemic-induced reforms seen in emerging economies (e.g., Argentina, South Africa, Nigeria)[1]. In the Nigerian context, the economic environment is increasingly liberalized, with critical sectors such as foreign exchange, fuel, and financial services operating more openly within an open market framework. Under President Tinubu's administration, key reforms like the removal of fuel subsidies and the liberalization of the foreign-exchange regime have narrowed the gap between official and parallel exchange rates, contributing to a more market-oriented economy (Financial Times, 2025a; Reuters, 2025). Additionally, efforts to automate FX trading and improve transparency in currency markets signal a substantive opening of previously controlled domains. Simultaneously, corporate reforms embodied in the Companies and Allied Matters Act (CAMA 2020) were aimed at streamlining business incorporation and boost private-sector activity. These developments reflect a broader shift in Nigeria toward liberalisation and market openness, mirroring global trends toward a more flexible economic governance. This transition has been driven by extraordinary events and challenges, including the COVID-19 pandemic, geopolitical tensions such as the Russia-Ukraine conflict, and emerging market vulnerabilities that have fundamentally altered the dynamics of global financial systems and monetary policy implementation[1,2]. The post-pandemic era has introduced new complexities to financial development and monetary policy management, with central banks worldwide navigating the challenging terrain of maintaining financial stability while supporting economic recovery. The

pandemic has accelerated the need for innovative monetary policy approaches and enhanced financial sector resilience, particularly impacting developing economies like Nigeria[2]. These global challenges have created ripple effects throughout the financial vvvvvvvv3

V3bsystems of developing nations, necessitating more sophisticated approaches to monetary policy and financial development strategies.

The interconnected nature of global financial markets has made it increasingly difficult for emerging economies to isolate themselves from external shocks. These international linkages have complicated monetary policy implementation, particularly in developing countries struggling with institutional weaknesses and corruption challenges[3]. The traditional approaches to monetary policy and financial development have proven insufficient in addressing these complex challenges, leading to a fundamental rethinking of financial sector development strategies and regulatory frameworks.

Nigeria's financial development trajectory has been characterised by periods of progress interspersed with significant challenges, evolving from basic banking services to a more sophisticated system encompassing various financial institutions and markets. However, recent studies indicate that this development has been uneven and constrained by multiple factors. Throughout 2022, the financial sector's growth remained subdued, affected by escalating energy prices, tightened external financial conditions, persistent security challenges, and infrastructure deficits hampering financial service delivery[4]. Recent economic data from the National Bureau of Statistics (NBS) indicate that Nigeria’s real Gross Domestic Product (GDP) grew by ₦229.9 trillion in 2023, representing an annual growth rate of 2.74%. In 2024, the economy expanded further to ₦237.7 trillion, with a full-year growth rate of 3.40% and a notable 3.84% in the fourth quarter alone, marking the fastest quarterly growth in over three years. Despite these gains,

projections for subsequent years remain varied: the Central Bank of Nigeria (CBN) projects a growth rate of 3.24%, the Federal Government anticipates a more optimistic 4.20%, while the International Monetary Fund (IMF) initially forecasted 2.70%, later revising its 2025 estimate to 3.40% in light of recent macroeconomic reforms. By combining actual outcomes with forward-looking projections, the data provides a clearer context for evaluating Nigeria's economic trajectory. These divergent projections highlight the complexity of Nigeria's financial development landscape and the challenges in achieving consistent growth[4].

The Nigerian financial sector's development has been particularly affected by the interplay between monetary policy effectiveness and institutional quality. The effectiveness of monetary policy instruments has been compromised by weak institutional frameworks and endemic corruption[5]. This interaction has created a complex environment where traditional monetary policy tools often fail to achieve their intended objectives, necessitating a more nuanced understanding of the relationship between policy implementation and institutional constraints.

Financial development encompasses multiple dimensions that collectively determine the sector's effectiveness and contribution to economic growth. The World Bank's Financial Development Database employs a sophisticated 4x2 framework that provides a comprehensive measurement approach across both financial institutions and markets[5]. Financial depth as a critical dimension, encompassing market capitalisation relative to GDP, private sector credit expansion, and financial instrument diversity[5]. The importance of financial depth lies in its ability to enhance monetary policy transmission mechanisms, facilitate efficient capital formation, and reduce corruption opportunities through increased transparency. This multidimensional approach to financial development has become increasingly important as financial systems become more complex and interconnected.

The concept of financial access has gained particular prominence in the past decade as a result of its significance in promoting inclusive growth through improved geographic penetration of financial services, enhanced demographic reach of banking services, and increased digital financial service adoption[6]. Their research demonstrates how improved access contributes to reduced income inequality, enhanced economic participation, and improved monetary policy effectiveness. The digital transformation of financial services has created new opportunities for expanding access while simultaneously introducing new challenges for regulatory oversight and corruption control.

Financial efficiency has emerged as a critical factor in determining the overall effectiveness of financial development initiatives[6,7]. Their research demonstrates how operational efficiency in financial systems contributes to economic development through reduced transaction costs, improved resource allocation, and enhanced monetary policy transmission. The adoption of technological innovations has played a crucial role in improving efficiency, though the benefits have often been undermined by corruption and weak institutional frameworks.

The stability dimension of financial development has become increasingly critical in the face of global economic uncertainties[8]. Their research highlights how system-wide resilience, maintained through adequate capital ratios, robust asset quality indicators, and effective liquidity management, contributes to enhanced policy credibility, reduced systemic risks, and improved investor confidence. The challenge of maintaining financial stability has become more complex in environments where corruption threatens the integrity of financial institutions and markets.

The theoretical underpinnings of monetary policy's relationship with financial development have evolved significantly over the last few years. Understanding monetary policy transmission mechanisms in environments characterized by high levels of corruption is crucial for evaluating how effectively policy decisions influence financial development and economic stability,

especially when institutional weaknesses may distort intended outcomes[9]. Their research emphasizes how traditional monetary policy channels may be distorted or weakened in the presence of significant institutional weaknesses, necessitating new approaches to policy implementation and evaluation.

The role of interest rates in financial development has received renewed attention lately. Interest rate policies influence financial development through direct impacts on credit costs, investment decisions, and savings behaviour[10]. Their research demonstrates how the effectiveness of interest rate transmission mechanisms can be compromised by corruption and weak institutional frameworks, particularly in developing economies like Nigeria.

Money supply management has emerged as a critical challenge in the context of financial development. The complexities of monetary control in corrupt environments, highlighting how traditional approaches to liquidity management Lately and credit creation may be undermined by institutional weaknesses[10]. This research emphasizes the need for more sophisticated approaches to monetary policy implementation that account for the presence of corruption and institutional constraints.

Inflation is a crucial determinant of a nation's financial development, significantly influenced by both monetary and fiscal measures. It remains a fundamental factor shaping a country's financial strength and economic growth[11]. Price stability is vital for financial development, as fluctuations in inflation can significantly affect financial planning, influence investment decisions, and undermine overall market efficiency. Consequently, effective inflation management is imperative for sustaining financial growth and ensuring stable economic development[11]. Their research demonstrates how corruption can exacerbate inflationary pressures and complicate monetary

policy implementation, particularly in developing economies struggling with institutional weaknesses.

However, to achieve robust financial development in any nation, the efficacy of control measures is highly contingent upon the minimization of corruption across all sectors and systems within the country. Financial corruption, therefore, stands as a substantial barrier to financial development. Corruption undermines financial development through various mechanisms, including the misallocation of resources, elevated transaction costs, decreased market efficiency, and erosion of investor confidence[12]. The entrenched presence of corruption in many developing economies poses significant challenges for the effective implementation of monetary policy, thereby hindering sustainable financial growth.

Furthermore, the relationship between corruption and the effectiveness of policy implementation has garnered heightened scholarly interest in recent times. For instance, a study investigates how corruption impedes policy implementation by diminishing transmission efficiency, distorting the mechanisms of interest rate adjustments, and undermining inflation management efforts[12]. Their findings underscore the critical need for robust anti-corruption measures as an integral component of broader strategies aimed at fostering financial development and stability.

Additionally, to addressing the challenges posed by corruption and inflation, exchange rate dynamics have emerged as a significant determinant in the analysis of monetary policy and financial development[13]. Fluctuations in exchange rates significantly impact international trade, capital inflows, and the overall stability of the external sector[13]. Thus, corruption further complicates exchange rate management, undermining the effectiveness of financial policies[14]. This is particularly evident in economies with substantial dependence on international trade and foreign investment, where the volatility of exchange rates can exacerbate financial instability and hinder

market development. Thus, incorporating exchange rate considerations into monetary policy frameworks is critical for achieving sustainable financial growth and mitigating the adverse effects of corruption on financial markets. While the challenges of maintaining exchange rate stability are particularly pronounced in environments characterized by high levels of corruption and weak institutional frameworks, these factors exacerbate the difficulty of implementing effective monetary policy[14]. The presence of corruption not only distorts exchange rate mechanisms but also undermines the credibility of financial institutions, leading to increased volatility and reduced investor confidence. Consequently, addressing these institutional weaknesses is crucial for stabilizing exchange rates and fostering sustainable financial development.

Despite extensive research on the individual components of financial development, there remain significant gaps in understanding the interplay between macroeconomic variables, such as corruption and inflation, and their combined effects on financial development. Existing literature often overlooks the complex, interactive effects of monetary policy, corruption, and financial development in developing countries, particularly Nigeria, where institutional weaknesses and corruption are prevalent. This study aims to fill this gap by examining how corruption influences the effectiveness of monetary policy and its impact on financial development in Nigeria. This study is especially timely given the evolving nature of global financial markets and the urgent need for robust financial systems in developing economies like Nigeria.

1.2 Statement of the Problem

Financial development is an essential pillar of economic growth, as it creates an environment in which financial institutions and markets function efficiently. Ideally, a robust financial sector mobilizes savings, manages risks, and promotes efficient capital allocation, fostering an economic landscape that supports growth, reduces poverty, and encourages entrepreneurial innovation[8].

Effective monetary policy plays a crucial role in achieving this environment. Central banks use various tools such as interest rates, money supply, and inflation control to stabilize the economy, creating a predictable economic climate that supports investment and trade[12]. In an ideal setting, monetary policy would interact seamlessly with a transparent and accountable financial sector to support sustainable economic development by improving financial depth, access, efficiency, and stability[15].

In the context of Nigeria, however, this ideal is far from reality. Financial development remains significantly constrained due to multiple macroeconomic and structural issues, including volatile inflation rates, currency instability, and rising security challenges[3]. These factors limit the Central Bank of Nigeria's (CBN) ability to implement effective monetary policies. Despite various policy interventions designed to enhance economic stability and growth, financial institutions in Nigeria continue to face challenges in mobilizing funds, allocating capital efficiently, and ensuring financial stability[16,17]. Financial depth and access, critical components of financial development, are particularly limited in Nigeria due to these macroeconomic adversities, with a large portion of the population still underserved by formal financial institutions[9].

Compounding these macroeconomic challenges is the pervasive issue of corruption, which significantly undermines the efficacy of monetary policy in Nigeria. Corruption distorts financial systems, often leading to inefficiencies that compromise the core objectives of monetary policy. Corruption within financial institutions manifests in various forms, including favouritism in loan approvals, embezzlement of public funds, and the misallocation of resources based on bribery rather than merit[7]. These corrupt practices contribute to a lack of transparency and accountability within the financial sector, reducing the productivity of investments and hindering the sector's role in economic growth[18]. For example, studies indicate that corruption leads to poor governance,

weakens institutional effectiveness, and creates significant barriers to foreign and domestic investment. When resources are diverted away from productive uses, financial development suffers, as the sector's ability to mobilize and allocate savings effectively is compromised[18].

Financial development in Nigeria has been more of a "yo-yo" than a consistent trend, with progress made only to be reversed by inflation, policy reversals, and corrupt practices.

On the issue of corruption, for instance. Imagine trying to fill up a car with fuel, only to find a small hole at the bottom of the tank that leaks as fast as you pump the fuel. No matter how much fuel you add, the tank never fills up. This scenario mirrors how corruption erodes financial development in Nigeria. Billions of naira are allocated to financial and economic development initiatives, but the misallocation and mismanagement of these funds due to corruption act as that "leaky hole," constantly draining resources and undermining the effectiveness of monetary policies.

Think of the monetary policy as a thermostat in a house. Ideally, the Central Bank should be able to adjust it to keep the economy comfortable, neither too hot nor too cold. However, in Nigeria's case, it is as though someone keeps turning the thermostat up and down at random intervals, with the economy oscillating between overheated inflation and under-stimulated growth. Factors such as corruption exacerbate these fluctuations, making it difficult to achieve a stable financial environment. That is why, as monetary policy aims to create a favourable economic climate and strong financial development, corruption often neutralizes these efforts, making Nigeria stuck in a cycle of partial progress and persistent setbacks.

A significant body of literature has explored the relationship between monetary policy and economic growth. However, the majority of these studies have not examined how corruption interacts with monetary policy to impact financial development specifically[19,20]. Most research focuses on the direct relationship between monetary policy and economic growth, often omitting a

detailed analysis of the role of financial development as a distinct variable[21,22]. For instance, a study examined monetary policy's effect on economic stability in Nigeria, but did not address how financial depth, access, stability, and efficiency respond to these policies under conditions of high corruption. This oversight creates a gap in the literature, as understanding these dynamics is essential for crafting policies that support financial development in challenging environments like Nigeria's.

Although Nigeria has recently moved toward exchange rate unification to achieve parity and reduce market distortions, the historical volatility of the exchange rate has had significant implications for financial development. Fluctuations in exchange rates have traditionally influenced inflationary trends, investor confidence, and the cost of external trade, thereby affecting financial access and stability (Central Bank of Nigeria [CBN], 2023; Borio & Disyatat, 2020). Understanding these dynamics remains critical in assessing the broader context of Nigeria's financial development.[17,23]. For instance, Nigeria's dependence on oil exports makes it highly susceptible to exchange rate shocks, which can destabilize financial markets and complicate the central bank's policy objectives. Despite its significance, exchange rate volatility is often treated as an isolated issue, rather than as an integral factor influencing financial development alongside monetary policy and corruption[24]. Limited research has examined how exchange rate fluctuations, monetary policy, and corruption interact to impact financial development in Nigeria[25]. This gap is critical, as addressing exchange rate volatility can help create a more stable financial environment that supports sustainable growth.

Given these complexities, this study aims to bridge the identified gaps by providing a comprehensive analysis of the interplay between monetary policy, corruption, and financial development in Nigeria, with particular emphasis on financial depth, access, stability, and

efficiency. Unlike previous studies, which largely focus on the relationship between monetary policy and economic growth, this research will examine how corruption modifies the outcomes of monetary policy measures within Nigeria's financial sector. By exploring this relationship, the study will highlight how corruption impedes financial development and offer insights into how targeted policies can mitigate these adverse effects.

This study also intends to address the overlooked role of exchange rate volatility as a control variable, acknowledging its pervasive influence on financial development. Exchange rate fluctuations are a crucial component of Nigeria's economic environment, shaping the broader financial landscape in ways that directly impact financial access, efficiency, and stability. By incorporating exchange rate volatility into the analysis, this study will provide a more comprehensive understanding of the unique challenges facing financial development in Nigeria.

1.3 Aim and Objectives of the Study

The aim of this study is to investigate the monetary policy, corruption and financial development in Nigeria. The specific objectives were to:

i. assess the influence of monetary policy on financial development in Nigeria
ii. examine the influence of corruption level on financial development in Nigeria
iii. explore the causal relationship among monetary policy, corruption level, and financial development in Nigeria.
iv. investigate the role of exchange rate as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria

1.4 Research Questions

i. How does monetary policy influence financial development in Nigeria?
ii. How does the corruption level affect financial development in Nigeria?

iii. What are the causal relationships among monetary policy, corruption level, and financial development in Nigeria?

iv. What is the role of the exchange rate as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria?

1.5 Hypotheses

$H_0$1: There is no significant relationship between monetary policy and financial development in Nigeria.

$H_0$2: Corruption level has no significant effect on financial development in Nigeria.

$H_0$3: There are no causal relationships among monetary policy, corruption level, and financial development in Nigeria.

$H_0$4: Exchange rate does not play a significant role as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria

1.6 Significance of the Study

The study's insights into the effectiveness of monetary policy and the impact of corruption on financial development will provide invaluable guidance to policymakers and government officials in Nigeria. By understanding these dynamics, policymakers can design and implement more targeted and effective policies aimed at promoting economic stability, reducing corruption, and fostering the growth of the financial sector.

Central bank officials and financial regulators will benefit from the study's findings regarding the intricate relationships between monetary policy, corruption, and financial development. This knowledge can assist them in refining monetary policy strategies and implementing regulatory measures to enhance the stability and efficiency of Nigeria's financial system, ultimately contributing to overall economic growth and stability.

Financial institutions operating in Nigeria will gain valuable insights into how monetary policy decisions and corruption levels affect financial development. This understanding will inform their strategic decision-making processes, risk management practices, and business operations, enabling them to navigate the economic environment more effectively and contribute to the country's financial sector growth.

Investors and businesses in Nigeria will benefit from the study's insights into the country's economic landscape, particularly regarding the impact of monetary policy and corruption on financial markets and investment opportunities. Armed with this knowledge, investors and businesses can make more informed decisions regarding capital allocation, risk management, and business operations, ultimately contributing to economic growth and development.

The academic community, including researchers, scholars, and students in economics, finance, and public policy, will find value in the study's contribution to academic knowledge. The study's theoretical frameworks, empirical findings, and policy recommendations will serve as valuable resources for further research and scholarly inquiry into related topics, fostering intellectual discourse and advancing the understanding of the complex interplay between monetary policy, corruption, and financial development.

Civil society organizations and advocacy groups focused on promoting transparency, accountability, and good governance in Nigeria will benefit from the study's insights into the role of corruption in hindering financial development. This knowledge can support their advocacy efforts aimed at combating corruption and promoting financial development, ultimately contributing to a more transparent and accountable governance framework in the country.

1.7 Scope of the Study

The scope of this study is multifaceted, with a primary focus on Nigeria as the geographical area of analysis. Nigeria, as one of the largest economies in Africa, presents a compelling backdrop for examining the intricate dynamics between monetary policy, financial development, corruption, and exchange rates within the region.

In terms of the data frame, the study encompasses a comprehensive analysis spanning the eleven years from 2013 to 2023. This timeframe is chosen to capture recent trends and developments in Nigeria's economy. Within this data frame, the study considers a range of variables related to monetary policy attributes and financial development metrics. Monetary policy attributes such as policy interest rates, money supply, and inflation rates are analyzed to assess their impact on the financial sector's performance and overall economic stability. Similarly, financial development metrics including depth, access, efficiency, and stability are examined to evaluate the effectiveness of Nigeria's financial institutions and markets in facilitating economic growth and development. Furthermore, the study investigates the effect of corruption on the financial development beyond only monetary policy. Corruption levels are assessed as a key variable to understand how institutional integrity influences the transmission mechanisms of monetary policy and the functioning of financial markets in Nigeria. By exploring this aspect, the study aims to shed light on the complex interplay between governance, corruption, and economic outcomes. Finally, exchange rates are considered as a control variable in the study to account for external factors that may influence monetary policy and financial development in Nigeria.

1.8 Limitation of the Study

Conducting the thesis on "Monetary Policy, Corruption, and Financial Development in Nigeria" faced challenges overcome through strategic solutions. Data access issues from sources like the Central Bank of Nigeria and others, marked by delays and incomplete datasets within 2013–2023,

were tackled by cross-verifying available data and using interpolation. Resource constraints, limiting funds and tools beyond E-VIEWS, were addressed by optimizing software use and tapping free resources. Time pressures from a fixed timeline were managed by prioritizing key tasks and streamlining analysis, including diagnostic tests. These efforts balanced ambition with practicality, ensuring robust findings despite obstacles.

1.9 Operationalisation of the Variables

This study aims to investigate monetary policy, corruption, and financial development in Nigeria, focusing on their interplay and the moderating effect of the exchange rate. The variables are operationalized as follows:

Dependent Variables (Financial Development Metrics):

The study examines four key dimensions of financial development:

1. **Financial Depth (FD):**
   - **Measurement Indicators:**
     - Broad money supply to GDP ratio (M2/GDP).
     - Indicates the overall size and depth of the financial sector in relation to economic activity.
2. **Financial Access (FA):**
   - **Measurement Indicators:**
     - Deposit accounts per capita.
     - Percentage of the adult population with access to formal financial services (e.g., bank accounts).
3. **Financial Efficiency (FE):**
   - **Measurement Indicators:**
     - Cost-to-income ratio, which measures the operational efficiency of financial institutions.

- Interest rate spread, reflecting the difference between borrowing (lending) and savings (deposit) rates.

4. **Financial Stability (FS):**

- **Measurement Indicators:**

- Capital adequacy ratio (CAR), assessing financial institutions' solvency.
- Non-performing loan (NPL) ratio, measuring credit quality and risk within the financial system.

Independent Variables (Monetary Policy Indices and Corruption):

1. **Policy Interest Rate (INT):**

- Central Bank of Nigeria's (CBN) benchmark interest rate, which influences credit demand, inflation, and economic activity.

2. **Money Supply (MS):**

- Total monetary assets in circulation, including physical currency and demand deposits, indicating monetary policy's expansionary or contractionary stance.

3. **Inflation Rate (INF):**

- Rate of increase in the general price level over a specific period, reflecting monetary stability and purchasing power.

4. **Corruption Level (CRPT):**

- Measured by indices such as Transparency International's Corruption Perception Index (CPI).
- **Interpretation:** A lower CPI score signifies higher perceived corruption, which may impact financial development through inefficiencies or loss of trust.

Control Variable:

1. **Exchange Rate (EX):**

- The Naira's exchange rate against the U.S. Dollar (USD), representing the external value of Nigeria's currency.
- Assessed for its role in influencing the relationship between monetary policy, corruption, and financial development, reflecting macroeconomic stability.

Alignment with Study Objectives:

1. **Objective 1:** The independent monetary policy variables (INT, MS, and INF) are linked to financial development metrics (FD, FA, FE, FS) to assess their influence.
2. **Objective 2:** Corruption level (CRPT) is analyzed for its impact on financial development metrics.
3. **Objective 3:** The causal relationships among monetary policy, corruption level, and financial development are explored using appropriate econometric models.
4. **Objective 4:** Exchange rate (EX) is incorporated as a control variable to understand its moderating effect on the primary relationships.

1.10 Operational Definition of the Terms

Monetary Policy: Monetary policy refers to the deliberate actions undertaken by the central bank or monetary authority of a country to regulate and control the supply of money, interest rates, and credit conditions in the economy. These actions are aimed at achieving specific macroeconomic objectives such as price stability, full employment, and sustainable economic growth.

Financial Development: Financial development refers to the process of improving the efficiency, depth, accessibility, and stability of financial systems within an economy. This includes the development of financial institutions, markets, instruments, and regulations that facilitate the mobilization and allocation of savings, the provision of credit, and the management of risks.

Corruption Level: Corruption level refers to the extent or degree of corrupt practices prevalent within a country's public and private sectors. It encompasses various forms of abuse of power, bribery, fraud, embezzlement, and nepotism that undermine the integrity of institutions and distort economic activities. Corruption levels are typically measured using quantitative indicators such as corruption perception indices or qualitative assessments based on expert surveys.

Exchange Rate: The exchange rate refers to the price of one currency in terms of another currency. It represents the rate at which one currency can be exchanged for another in the foreign exchange market. Exchange rates play a crucial role in facilitating international trade and investment, determining the relative value of currencies, and influencing a country's balance of payments and external competitiveness.

Depth of Financial System: Depth of financial system refers to the size and volume of financial intermediaries and markets within an economy. It is typically measured by the total assets of financial institutions, the value of outstanding loans and deposits, and the market capitalization of stock exchanges and bond markets. A deeper financial system indicates a higher level of financial intermediation and a greater ability to mobilize and allocate savings for productive investment.

Access to Financial Services: Access to financial services refers to the ease with which individuals and businesses can obtain and utilize financial products and services. It encompasses factors such as the availability of banking branches and ATMs, the range of financial products offered, and the affordability of financial services. Access to financial services is often measured by indicators such as the percentage of adults with bank accounts, the number of bank branches per capita, and the proportion of the population with access to credit.

Efficiency of Financial System: Efficiency of a financial system refers to the ability of financial institutions and markets to allocate resources effectively and to process transactions at low cost. It

is measured by factors such as the ratio of operating expenses to total assets for financial institutions, the speed and accuracy of transaction processing, and the level of technological adoption in the financial sector. A more efficient financial system reduces transaction costs, enhances liquidity, and promotes economic growth.

Stability of Financial System: Stability of financial system refers to the resilience of financial institutions and markets to withstand economic shocks and disruptions. It is measured by indicators such as capital adequacy ratios, non-performing loan ratios, and measures of systemic risk such as the volatility of asset prices and the correlation between financial institutions. A stable financial system is characterized by robust risk management practices, adequate capital buffers, and effective regulatory oversight.

Corruption Perception Index (CPI): The Corruption Perception Index (CPI) is a composite index published annually by Transparency International, which ranks countries based on perceived levels of public sector corruption. It is derived from expert assessments and opinion surveys conducted among businesspeople, academics, and other professionals. The CPI scores countries on a scale from 0 to 100, with higher scores indicating lower levels of perceived corruption and greater transparency and accountability in public institutions.

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Chapter Two

Literature Review

2.1 Conceptual Review

2.1.1 Financial Development

The World Bank defines the financial sector as a network of interrelated and interdependent roles fulfilled by financial institutions and markets, where financial instruments are designed and traded. These institutions and markets operate under a legal and regulatory framework specific to each economy. The financial sector performs several critical functions: mobilizing and pooling savings, generating information about potential investments, allocating capital efficiently, facilitating trade, diversifying and managing risks, monitoring investments and risks through effective corporate governance, and easing the exchange of financial commodities. Financial development, on the other hand, encompasses a wide range of elements, including banking systems, stock and bond markets, regulatory frameworks, and the availability of financial services to individuals and businesses. Financial development is achieved when the financial sector executes their functions efficiently and effectively, enhancing the efficiency with which resources are allocated, promoting savings and investment, and facilitating the management of risk in the process.

Thus, financial sector development is concerned with overcoming the "costs" incurred in the financial system[2]. That is, it involves the process of reducing costs associated with the financial system of an economy such as the costs of acquiring information, enforcing contracts, and executing transactions that results into the emergence of financial contracts, intermediaries, and markets. It also entails the different types and combinations of information, transaction, and enforcement costs in conjunction with different regulatory, legal and tax systems which has led to distinct forms of contracts, intermediaries and markets across countries in different times[3].

Financial developments as factors, policies, and institutions that lead to effective financial intermediation and markets, and deep and broad access to capital and financial services[3]. This entails 18 institutional and business environments, financial intermediaries and markets that provide basic support for a financial system. This results in efficient risk diversification and capital allocation and outputs of the financial intermediation process, such as availability of and access to capital. These factors, policies and institutions depend on a facilitating environment, structure, size, regulations and enforcement which when absent results in financial development that cannot be well implemented, improved or sustained[3,4].

A solid and well-functioning financial sector is a powerful engine of economic growth. Since it generates domestic savings, which in turn lead to productive investments in local businesses[5]. Furthermore, effective banks can channel international streams of private remittances. A large body of evidence suggests that financial sector development plays a huge role in financial development[6,8]. It promotes economic growth through capital accumulation and technological progress by increasing the savings rate, mobilizing and pooling savings, producing information about investment, facilitating and encouraging the inflows of foreign capital, as well as optimizing the allocation of capital[7,9]. Literature also shows that countries with better developed financial systems tend to grow faster over long periods of time[10].

Historically, financial development has been closely linked with financial development. Economists like Joseph Schumpeter and Robert Solow have argued that a well-developed financial sector can spur economic growth by providing the capital needed for innovation and investment. Financial markets mobilize savings from diverse sources and allocate them to productive investments, thus driving economic expansion[12]. Furthermore, a sophisticated financial system can

reduce transaction costs, improve information dissemination, and enhance risk management, all of which contribute to a more efficient and resilient economy.

A crucial aspect of financial development is the evolution of financial institutions[3]. These include banks, insurance companies, mutual funds, and pension funds, among others. Banks play a central role by providing loans and credit, which support business operations and expansion. Over time, non-bank financial institutions have also become significant, offering various services such as investment opportunities and insurance, which further diversify financial markets and provide more options for managing financial risks[13].

Another key component of financial development is the regulatory and legal framework governing financial activities. Effective regulation helps prevent financial crises by ensuring that institutions operate in a sound and prudent manner[13]. It also protects consumers and investors from fraud and malpractice. In recent decades, many countries have undertaken extensive financial reforms to enhance the stability and efficiency of their financial systems, including the implementation of international standards and practices.

In addition to institutional and market developments, financial inclusion has become a major focus in financial development efforts. Financial inclusion refers to ensuring that individuals and businesses, particularly those in underserved or marginalized communities, have access to useful and affordable financial products and services[14]. This includes access to banking, credit, insurance, and payment systems. Improving financial inclusion can help reduce poverty, enhance economic opportunities, and promote equitable growth.

The rise of financial technology, or fintech, has also significantly impacted financial development. Innovations such as digital banking, mobile payment systems, and blockchain technology are

transforming how financial services are delivered and consumed[14]. These advancements are making financial services more accessible, efficient, and cost-effective, especially in developing countries where traditional banking infrastructure may be lacking.

Financial development is a multifaceted process that involves the growth and improvement of financial institutions, markets, and regulatory frameworks. It plays a vital role in economic growth and stability by enhancing resource allocation, promoting savings and investment, and facilitating risk management[15]. As financial systems continue to evolve, ongoing reforms and innovations will be crucial in addressing emerging challenges and opportunities in the global economy.

Nigeria, Africa's economic giant, has a fascinating story to tell when it comes to financial development. While the country boasts a diverse financial system with banks, insurance companies, and a stock exchange, it's a tale of both progress and hurdles. On the bright side, Nigeria has witnessed a rise in formal financial institutions and a growing number of citizens with bank accounts, thanks in part to mobile money initiatives[16]. The Central Bank's reforms have also bolstered the financial sector's stability.

However, the road ahead isn't without its bumps. A large portion of the population, especially in rural areas, remains unbanked, lacking easy access to affordable financial services. The extensive informal sector further complicates matters, limiting financial inclusion efforts[17]. Corruption also throws sand in the gears of progress, discouraging investment and hindering a smooth flow of resources. Weak infrastructure, like limited electricity and internet access, acts as another roadblock, especially for the adoption of financial technologies.

Despite these challenges, Nigeria's financial sector is on an upward trajectory. The increasing use of mobile money and the potential of Fintech solutions offer rays of hope for reaching the

unbanked population. Government policies that promote savings, attract investment, and tackle corruption are crucial for building a robust and efficient financial system. Nigeria's financial development is a work in progress. By addressing the existing challenges and embracing the opportunities presented by Fintech, the country can unlock its full financial potential and pave the way for sustainable economic growth.

To measure financial development, the World Bank's Financial Development Database employs a comprehensive 4x2 framework. This framework evaluates four key dimensions such as depth, access, efficiency, and stability across both financial institutions and financial markets[8,17]. Financial depth refers to the size and liquidity of financial systems, while access measures the ability of individuals and enterprises to utilize financial services[18]. Efficiency examines the operational performance of financial institutions and markets, and stability assesses their resilience to economic shocks.

Financial markets are categorized into capital markets and money markets. Capital markets are sources of long-term funds, facilitating the issuance of bonds and shares through initial public offerings (IPOs). Money markets, in contrast, provide short-term funding for operational needs and offer liquidity to investors in exchange markets. By comprehensively assessing these dimensions, the World Bank's 4x2 framework offers a robust tool for analyzing and promoting financial development, ensuring that financial systems can support sustainable economic growth and stability[17].

Financial Institutions and Their Characteristics

With the establishment of bent value finance limited, finance companies first appeared in Nigeria[14]. The primary line of business is financing, mostly to people in the transportation and related industries, through hire buy and equipment leasing programs. The quantity of financial houses has skyrocketed since then. Finance companies were typically not subject to any particular regulatory or supervisory organization, they started to operate similarly to banks but without the same restrictions[15]. At least twenty-three businesses offered consumer credit service. They were in place to support businesses that couldn't afford to buy leasing agreements, even though they didn't operate in a regular or official manner[16]. However, the NDIC Annual Report reveals that, of the 100 finance houses that existed between 1986 and 1990, 63 had fully complied with the registration requirement. The role of finance businesses in the Nigerian financial system was the main topic of discussion, particularly in light of the bank's fixed 21 percent lending rate because finance houses were not subject to the same ceiling.

Nigeria's financial institutions comprise a heterogeneous environment of numerous entities, each with a unique function[17]. Commercial banks, merchant banks, development banks, specialty banks, mortgage banks, microfinance banks, and discount and finance houses are some examples of these organizations. The Central Bank of Nigeria (CBN), which serves as both the country's central monetary authority and regulator, is at the top of this financial hierarchy[18].

The range of financial entities in Nigeria's complex financial system extends beyond traditional banking. It also includes non-bank financial institutions, which include, among others, administrators of pension funds and insurance businesses, all of which are vital to the country's economy.

Insurance Companies: An essential part of the non-bank financial sector is the insurance industry. They offer both individuals and companies a broad range of insurance products, including health insurance, life insurance, and property and casualty insurance[17,18]. These services are essential for risk management and providing policyholders with financial security. For example, property insurance guards against losses from things like fire, theft, or natural catastrophes, while life insurance policies give families protection in the event of a breadwinner's passing. Access to medical treatments is guaranteed by health insurance, which lowers the cost of healthcare. Insurance businesses contribute to the general stability of the Nigerian economy by reducing risks and offering a safety net.

Pension Fund Administrators (PFAs): PFAs are responsible for managing the nation's pension system, which is crucial for safeguarding workers' financial futures. Employer and employee pension contributions are managed and invested by these organizations. The Defined Benefits Scheme gave way to the Contributory Pension Scheme (CPS) in Nigeria as a result of the Pension Reform Act of 2004[19]. Employees contribute monthly to a retirement savings account under this plan, while PFAs handle and invest the money to guarantee growth. Regular pension payments are given to retiring employees, giving them financial stability in the years following their employment. PFAs play a crucial role in assisting people with retirement savings and investments, which lessens the need for government post-retirement financial assistance.

Financial Markets: In the Nigerian economy, however, the financial markets act as the focal point for the distribution of capital. There are two primary segments in these markets: Money Market: Short-term funds are actively exchanged in the money market. It consists of different financial instruments that usually have maturities between a few days and a year. Commercial banks, the Central Bank of Nigeria (CBN), and other financial organizations are important players

in the money market. For these organizations, this market is essential to short-term liquidity management[18]. It is the location of short-term lending and borrowing activities, which support institutions in meeting their short-term funding needs and managing their cash flow.

Capital Market: Long-term finances are directed toward investment and expansion prospects through the capital market. It consists of the primary market, which is where newly issued securities are offered for sale to investors, and the secondary market, which is where investors purchase and sell pre-existing assets[18]. When it comes to giving governments and companies access to long-term funding for initiatives, growth, and infrastructure development, the capital market is essential. It also provides chances for individuals and institutional investors to invest in stocks, bonds, and other long-term financial products, boosting the economy in the process.

On the other hand, non-bank financial organizations-such as administrators of pension funds and insurance companies-are essential to risk management and retirement savings. For both people and companies, they offer financial security and long-term stability. Furthermore, the financial markets, which comprise the money and capital markets, function as the catalyst for the distribution of short- and long-term capital, promoting economic expansion and advancement in Nigeria.

Regulatory Framework in Nigeria's Financial Sector:

In Nigeria, the stability and efficiency of the financial system are upheld through a comprehensive regulatory framework overseen by various regulatory bodies. These entities play essential roles in maintaining order, ensuring compliance with established rules and regulations, and safeguarding the interests of both financial institutions and consumers[20]. The following regulatory bodies are instrumental in overseeing Nigeria's financial landscape:

Federal Ministry of Finance: The Federal Ministry of Finance serves as a central authority responsible for formulating financial policies and regulations in Nigeria. It plays a pivotal role in shaping the economic landscape and ensuring that financial policies are aligned with the country's broader economic goals.

Central Bank of Nigeria (CBN): The Central Bank of Nigeria is Nigeria's apex financial institution and is primarily responsible for maintaining monetary and financial stability. The CBN manages the country's monetary policy, including the issuance of currency, regulation of money supply, and control of inflation. It also supervises and regulates the operations of financial institutions, including commercial banks and microfinance banks[18,20].

Nigeria Deposit Insurance Commission (NDIC): The NDIC is a critical regulatory body focused on safeguarding the interests of depositors. It achieves this by providing deposit insurance and ensuring the stability of Nigeria's financial system. The NDIC plays a vital role in protecting depositors' funds, instilling confidence in the banking sector, and maintaining financial stability[20].

National Insurance Commission (NAICOM): NAICOM is tasked with regulating and overseeing the insurance sector in Nigeria. It ensures that insurance companies operate in compliance with established guidelines and policies. This regulatory body plays a crucial role in protecting policyholders' interests and maintaining the integrity of the insurance industry.

Pension Commission (PENCOM): PENCOM is responsible for supervising and regulating the pension industry in Nigeria. It oversees pension fund administrators (PFAs) and ensures that pension contributions are professionally managed and invested for the benefit of contributors. This body plays a central role in securing the financial future of the Nigerian workforce[20].

Securities and Exchange Commission (SEC): The SEC is the regulatory body responsible for overseeing Nigeria's capital market. It ensures that the capital market operates efficiently, transparently, and in compliance with applicable laws and regulations. The SEC regulates the issuance and trading of securities, promoting fair practices and investor protection[20].

These regulatory bodies work collaboratively to enforce compliance within the financial sector, fostering trust, transparency, and stability in Nigeria's financial markets. By maintaining the integrity of these markets and ensuring that financial institutions adhere to established standards, these regulatory bodies contribute significantly to the resilience and efficiency of Nigeria's financial system[20]. Their collective efforts are essential in safeguarding the interests of both institutions and consumers while promoting sustainable economic growth.

Functions of Financial Intermediaries

The financial sector of Nigeria encompasses a diverse array of entities and markets, each playing a unique role in the nation's economic landscape[8]. It includes various financial institutions, both traditional and non-bank, as well as financial markets crucial for channelling funds. Additionally, regulatory bodies oversee these institutions and markets to ensure the stability and compliance with established rules and regulations, contributing to the overall efficiency and resilience of the financial system[20]. Financial institutions operating within the Nigerian financial sector span a broad spectrum. These entities consist of commercial banks, merchant banks, development banks, specialized banks, microfinance banks, mortgage banks, and discount and finance houses. At the pinnacle of this financial pyramid stands the Central Bank of Nigeria (CBN), serving as the apex bank and regulating the entire sector. The non-bank financial institutions include insurance companies and pension fund administrators, both playing pivotal roles in risk management and retirement savings.

Moreover, the financial markets in Nigeria comprise two fundamental segments: the money market and the capital market. The money market provides a platform for trading short-term funds, making it a vital component for liquidity management[24]. In contrast, the capital market facilitates the exchange of long-term funds, offering investment and growth opportunities for businesses and individuals looking to invest their surplus resources for the long haul.

To ensure the stability and efficiency of Nigeria's financial system, various regulatory bodies meticulously oversee these institutions and markets. These regulatory authorities include the Federal Ministry of Finance, responsible for formulating financial policies and regulations. The Central Bank of Nigeria (CBN) plays a pivotal role in maintaining monetary and financial stability, safeguarding the nation's economic foundations[20]. Furthermore, the Nigeria Deposit Insurance Commission (NDIC) ensures the protection of depositors' funds, while the National Insurance Commission (NAICOM) regulates the insurance sector. The Pension Commission (PENCOM) is tasked with supervising pension funds and administration. Lastly, the Securities and Exchange Commission (SEC) is responsible for overseeing the capital market and ensuring that it operates fairly and efficiently.

Financial intermediation, a fundamental process within the financial sector, assumes a pivotal role in an economy like Nigeria's. It serves as the linchpin connecting those with surplus financial resources to those in need of capital[25]. This process encompasses several key functions, notably pooling the resources of small savers and mobilizing wholesale finance and lines of credit. Without financial intermediaries, the efficient allocation of resources to meet the diverse financial needs of businesses and individuals would be challenging. These intermediaries, primarily banks, aggregate the small deposits of numerous savers, creating a substantial pool of funds that can be extended as loans to borrowers in need of larger sums. Moreover, they have the capacity to mobilize substantial

funds from wholesale financial markets, facilitating the provision of lines of credit to a wide range of borrowers, including small and medium-sized enterprises (SMEs) and individuals seeking mortgages for housing. This not only streamlines lending and borrowing activities but also makes them more accessible and efficient for all parties involved[25].

The financial sector in Nigeria is multifaceted, consisting of various institutions, markets, and regulatory bodies. It performs a critical role in the nation's financial development, facilitating the allocation of financial resources to meet the diverse needs of businesses and individuals. By pooling resources, mobilizing wholesale finance, and providing lines of credit, financial intermediaries enhance the efficiency and accessibility of financial services, contributing to economic growth and stability. These functions are vital components of a dynamic and robust financial system that supports Nigeria's economic progress[26].

Providing safekeeping, accounting, and payments mechanisms for resources: Banks are an obvious example for the safekeeping of money in accounts, the records of payments, deposits and withdrawals and the use of debit/ATM cards[27]. Financial intermediaries can do all of this much more cheaply than individuals because they take advantage of economies of scale. All of these services are standardized and automated on a large scale, so per-unit transaction costs are minimized.

Providing liquidity: Financial intermediaries make is easy to transform various assets into a means of payment through ATMs, credit cards, debit cards, etc[25]. In doing this, financial intermediaries manage many short-term outflows and investments with long-term outflows and investments to meet their obligations while profiting from the spread between long-term and short-term interest rates.

Financial intermediaries play a vital role in the financial system, performing functions that not only enhance the efficiency and accessibility of financial services but also mitigate risk and address the complex dynamics of financial markets[28]. These functions include diversifying risk, collecting and processing information, and reconciling conflicting preferences of lenders and borrowers[10].

Diversifying risk is a fundamental function of financial intermediaries. They serve as risk transformers by aggregating funds from various depositors and channelling these funds into diverse investment opportunities. This risk transformation is particularly crucial in mitigating the potential adverse effects of a default on any single loan. When financial intermediaries lend depositor funds to a multitude of borrowers across different sectors and risk profiles, the risk of financial loss is significantly reduced. Essentially, financial intermediaries convert relatively risky individual investments into more secure, diversified portfolios, making them an attractive and safer option for depositors. This risk-diversification mechanism is instrumental in safeguarding depositors' funds and maintaining the overall stability of the financial system[13].

Furthermore, financial intermediaries are adept at collecting and processing information, providing a valuable service that individual investors cannot replicate. Assessing the risk associated with various investment opportunities is a complex and data-intensive task[29]. Financial intermediaries excel in this role by efficiently and accurately gauging the risk of different investments. Their ability to access and analyze vast amounts of data enables them to make informed decisions and price investments accordingly. This is particularly important in financial markets characterized by asymmetric information, where some market participants possess more information than others. Financial intermediaries bridge this information gap and ensure that investments are priced fairly and transparently.

The financial markets often involve a multitude of investors, each with unique financial goals and preferences. Financial intermediaries excel in reconciling these conflicting preferences between lenders (depositors) and borrowers (investors)[22]. Depositors generally seek secure and liquid investments, while investors are in search of capital to finance their projects and initiatives. Financial intermediaries act as intermediaries, aligning the deposit requirements of savers with the investment requirements of borrowers[29]. They facilitate the transfer of funds from those with surplus resources to those in need, striking a balance between the risk-return profile that depositors are comfortable with and the capital needs of borrowers. In doing so, financial intermediaries serve as a critical bridge between these two distinct groups, helping to allocate funds efficiently and effectively in the financial markets.

In essence, financial intermediaries provide indispensable services that not only enhance the efficiency of the financial system but also serve as risk mitigators. Their role in diversifying risk, collecting and processing information, and reconciling differing preferences between depositors and investors contributes to the overall stability and functionality of the financial sector. As experts in these areas, financial intermediaries play a pivotal role in supporting economic growth and prosperity[30]. Financial intermediation efficiency and its relationship with financial innovation has garnered attention in various regions and contexts, contributing valuable insights to the understanding of these complex dynamics[29]. Several studies have delved into this area, each offering unique perspectives and findings.

A study was conducted to explore the efficiency of financial intermediation within the Nigerian context, focusing on the unique characteristics of the nation's financial system. The research examined the challenges of financial intermediation in 21st-century Nigeria, a period marked by significant transformations in the global and domestic financial landscapes. In particular, it

identified and analyzed the specific obstacles faced by financial intermediaries, such as the pressures of technological innovation, regulatory changes, and market volatility. The findings provided insights into how these factors influence the efficiency of intermediation processes and offered recommendations for enhancing financial system performance in Nigeria[7, 30].

In a rapidly changing economic environment—particularly following the fall of the Iron Curtain—Hungary implemented substantial financial reforms aimed at modernizing its financial system. Studies on this period have examined the impact of these reforms on the efficiency of financial intermediation, revealing how policy changes can shape the performance of financial institutions. While such evidence offers valuable lessons, empirical reviews indicate a scarcity of research directly linking financial intermediation efficiency to financial innovation in the Nigerian context. This gap underscores the need for studies that analyze how Nigeria's own financial reforms and innovations influence the effectiveness of its intermediation processes[31]. Most existing studies have predominantly concentrated on distinct facets of this complex relationship. Some focused on how financial innovation affected the performance of commercial banks in Nigeria and other countries[7,12,23,31]. These studies explored how technological and financial innovations impacted the operations and profitability of commercial banks, providing valuable insights into the practical implications of financial innovation in the banking sector.

In contrast, others investigated the broader effects of financial innovation, particularly its influence on economic growth and the welfare of the citizenry[6,8,19]. These studies examined how financial innovation translated into macroeconomic outcomes, such as overall economic growth and the well-being of the population.

Considering the fundamental role of fund mobilization and allocation in driving economic growth and development, financial intermediation remains a core component of the financial system[21]. The

interplay between financial intermediation efficiency and financial innovation is a critical aspect that deserves further exploration, as it has the potential to shape the trajectory of financial markets and financial development. The existing body of research, although diverse in focus, collectively contributes to our understanding of the multifaceted relationship between financial intermediation, financial innovation, and their impact on economies. However, more comprehensive studies directly linking the efficiency of financial intermediation with financial innovation in the Nigerian context could provide valuable insights into the unique challenges and opportunities faced by this emerging market.

Financial Development and Economic Growth

The financial sector, encompassing both banking and non-banking institutions, plays a crucial role in mobilizing savings and generating valuable information for investment projects and resource allocation. It is commonly believed that gathering information about a firm's management and market conditions can sometimes prevent transactions from occurring[32]. For sustained growth in the real economic sector, a dynamic and vibrant financial system is essential. Beyond physical capital accumulation, the assessment of market conditions and the reduction of information asymmetries by financial systems are vital for growth and economic expansion. However, the finance-growth relationship is subject to debate[32].

Some researchers argue that financial growth is a prerequisite for economic growth[33]. On the other hand, other studies argue that the significance of financial sector development is overstated and not necessarily integral to an economic growth strategy. This perspective suggests that the type of data used (cross-section or time-series) can lead to varying conclusions. Furthermore, some believe that the causality runs from economic growth to financial development rather than the reverse. As economies expand, they require more sophisticated financial tools, and a vibrant financial system

adapts to these needs[32]. The development of the financial sector is not necessarily linked to growth in the real economy[34].

Stock markets are a vital part of any financial system due to their liquidity, which attracts long-term investments at low transaction costs[33]. High liquidity in stock markets allows investors to sell equities at any time, thus mobilizing savings and fostering productivity growth. The global integration of stock markets means that the relationship between risk and uncertainty encourages investors to shift their portfolios towards high-return, long-term investments[34]. Additionally, stock markets facilitate risk-averse investors and savers in pursuing safer investment options at lower costs by diversifying their portfolios. The availability of more liquid means of sharing risk ensures that capital flows towards the most promising investment projects[35].

There is ongoing debate among researchers regarding the relationship between financial development and economic growth. One school of thought argues that there is a significant link between the two, while another contends that there is no such relationship[32]. Within the first school of thought, there are three distinct perspectives. The first perspective suggests that growth in the financial sector leads to growth in the real economy. This "supply-leading" approach posits that a well-developed financial sector with efficient instruments facilitates the efficient allocation of resources to priority investment areas, thereby accelerating economic growth[34].

The second perspective within the first school of thought proposes that the growth of the financial sector is a response to the expansion of the real economy. As the real economy grows, it demands more sophisticated financial instruments, prompting the financial sector to develop accordingly[35]. The third perspective suggests a bidirectional relationship between financial development and economic growth. Initially, advancements in the financial sector spur technological innovation and

growth in the investment and services sectors. In turn, these advancements drive further development in the financial sector through the introduction of new financial instruments[36].

However, there are other scholars who believe that causality runs in both directions. The proponents of this view postulate that there is a bi-directional relationship between financial development and economic growth. Financial development causes growth, it is important that the financial system is well functioning[36]. The real economy to fully exploit available new opportunities. When there is reverse causation, it is assumed that when the real economy grows, there will be more savings coming into the financial system which will allow it to extend new loans[37]. A study found a two-way causality between finance and growth. Using five variables namely GDP, total credit to the economy, labour, investment and trade, the study observed that financial development was the second most important sector after the contribution from labour force growth in affecting economic growth[38]. They also found out that strong economic growth in the last 20 years has significant impact on financial development by providing a solid credit base. The study concluded that causality for GDP growth to financial development is stronger than the causality from finance to GDP growth.

Levine (1996) further explains how the financial system is affected by economic growth; welldeveloped financial systems reduce information and transaction costs, influence savings rates, investment decisions, technological innovation, and long- run growth rates. Without minimizing the role of institutions, the work advocates a functional approach to understanding the role of financial systems in economic growth. This approach focuses on the ties between growth and the quality of the functions provided by the financial system. This discourages a narrow focus on one financial instrument, such as money, or a particular institution, such as banks.

The intricate connection between financial structure and the operation of the financial system[6]. Three distinct stages in the correlation between financial development and economic growth[8]. Firstly, financial development plays a pivotal role in expanding the foundation for economic growth during the initial phases of development. Secondly, there exists a reciprocal relationship between economic growth and financial development, where each factor influences the other. Lastly, as society progresses technologically, financial development once again takes the lead in driving economic growth[3].

Financial development and economic growth critically and made the point that, while potentially significant, financial development's contribution to economic growth is contingent upon the establishment of the proper institutional framework[27]. Even when other prerequisites are satisfied, progress may be limited in the absence of the financial sector, which can play a significant role in promoting economic expansion and reducing poverty. Development of the financial sector can accelerate long-term growth by influencing capital accumulation and the pace of technical advancement[9]. The growth of banks promotes economic growth by directing savings toward high-productivity but risky and illiquid asset classes while enabling people to lower the risk attached to their liquidity requirements[27].

2.1.1.1 Depth of the Financial System

The depth of a financial system refers to the size and sophistication of financial institutions and markets. It encompasses the range and complexity of financial instruments, the volume of transactions, and the overall capitalization of financial markets[20]. A deep financial system is characterized by a wide array of financial products and services, including diverse banking services, advanced capital markets, a robust insurance sector, and a variety of investment vehicles. Deep financial markets provide numerous opportunities for savings and investment, helping to

mobilize capital more effectively and allocate resources efficiently across the economy. The depth of financial markets can also be measured by the ratio of private sector credit to GDP, the market capitalization of listed companies, and the value of traded securities relative to GDP. A deeper financial system tends to enhance economic growth by providing better opportunities for risk diversification and long-term investment.

2.1.1. 2Access to the Financial System

Access to the financial system refers to the ability of individuals and businesses to obtain essential financial services[19]. This includes access to banking, credit, savings, payment systems, and insurance. Financial inclusion is a critical aspect of access, ensuring that financial services are available to all segments of society, especially marginalized and underserved populations. Improved access to financial services enables households to manage their finances more effectively, invest in education and health, and smooth consumption over time. For businesses, access to credit and other financial services is essential for startup, expansion, and operational sustainability. Measures of access typically include the percentage of the population with bank accounts, the number of bank branches and ATMs per capita, and the availability of microfinance and small business loans. Enhancing access to financial services promotes economic participation and can help reduce poverty and inequality.

2.1.1. 3 Efficiency of the Financial System

The efficiency of a financial system refers to the ability of financial institutions and markets to allocate resources effectively and at the lowest possible cost[19]. An efficient financial system maximizes returns on investments, minimizes transaction and information costs, and provides timely and reliable financial services. Efficiency is achieved through competitive markets, technological advancements, and sound regulatory practices. Indicators of financial efficiency

include the cost of financial intermediation, interest rate spreads, the time required to process financial transactions, and the productivity of financial institutions[20]. High efficiency in the financial system leads to better investment opportunities, increased economic productivity, and overall economic growth. It also involves the effective management of risks, ensuring that capital flows to the most productive uses.

2.1.1.4 Stability of the Financial System

Stability in the financial system is crucial for maintaining confidence and preventing crises. A stable financial system is resilient to economic shocks and can continue to function effectively during periods of stress. Stability involves robust regulatory frameworks, prudent risk management practices, and the presence of financial safety nets such as deposit insurance and lender-of-last-resort facilities[21]. It also includes the monitoring and mitigation of systemic risks, such as those posed by large financial institutions whose failure could threaten the entire system. Key indicators of financial stability include low levels of non-performing loans, adequate capital buffers, and sound liquidity management. Ensuring stability requires constant vigilance by regulatory authorities to detect and address emerging risks, as well as maintaining macroeconomic policies that support financial health[22]. A stable financial system promotes sustained economic growth and protects the economy from severe disruptions.

2.1.2 Monetary Policy

Monetary policy is a set of actions aimed at controlling the value, supply, and cost of money in an economy to align with the predicted economic activity level[37]. Monetary policy is a strategic action taken by monetary authorities to regulate the money supply and credit creation in order to achieve certain economic objectives. Monetary policy is a strategy used by the Central Bank to regulate the money supply in order to achieve the goals of overall economic policy. Scholars and academics

have shown significant interest in the subject of monetary policy. This has led to several interpretations of the topic, with each author offering their own take. Monetary policy is a set of policies aimed at controlling the value, supply, and cost of money in an economy to align with the amount of economic activity[38]. Monetary policy is a significant tool used to manage and control the amount, cost, availability, and flow of money and credit in an economy to accomplish certain macroeconomic goals[39]. Central banks intentionally regulate the money supply and credit conditions to achieve certain economic goals. Monetary policy involves regulating the direction and flow of monetary policy and credit facilities to achieve stable prices and financial development in an economy. Monetary policy aims to control the economy by managing the quantity of money, interest rates, and credit availability[39]. Monetary authorities use open market operations, adjustments in the discount rate, changes in reserve requirements, and other tools to regulate the pace of money supply expansion[36]. The objectives of monetary policy include maintaining price stability, achieving full employment, and ensuring a sufficient pace of financial development[40]. Monetary policy is a set of policies intended to control the amount, cost, and flow of money and credit. The six policies include managing the money supply, credit volume, interest rates, and allocation. Monetary policy is the choices made by public authorities to control the amount and flow of money in the economy in order to address macroeconomic imbalances that are not corrected by market forces[40]. It guarantees enough funding for the economy, while also ensuring the stability of the financial system and overseeing credit institutions. Monetary policy impacts the real economy via many channels: the interest rate channel, other asset prices (such as stocks and bonds), the exchange rate channel, and the credit channel[38].

Monetary policy refers to the intentional use of monetary tools by monetary authorities, such the central bank, to attain macroeconomic stability. Monetary policy is the primary instrument used to

achieve the goal of maintaining stability in both monetary and price levels[40]. Monetary policy is a set of actions carried out by the central bank to manage the supply of money and credit in order to achieve certain macroeconomic objectives[39]. Monetary policy is a strategy used by monetary authorities to regulate the money supply in an economy to promote favourable financial development. Most governments feel that controlling the money supply may impact the rate of inflation, thus they attempt to regulate it. Monetary policy involves government activities intended to impact the behaviour of the monetary sector[37]. Monetary policies are successful in countries with well-established money and financial markets, such as developed economies worldwide[40]. This is the point at which an intentional alteration in monetary factors impacts the fluctuations of several other variables within the monetary domain. Monetary policy is a crucial tool that countries use to maintain stability in domestic prices and exchange rates, which are essential for achieving sustained financial development and external viability. Monetary policy may be inflationary or deflationary based on the country's economic situation. Contractionary policy aims to reduce the money supply to control inflation, whereas expansionary policy is used to boost economic activity to address unemployment during a recession[37]. Monetary policy is a government's structured actions to regulate the currency within its economy to achieve certain economic objectives. Three fundamental types of monetary policy choices may be made regarding the money supply, interest rates, and the operations of credit markets and the banking system.

Monetary policy originated from Irving Fisher's development of the quantity theory of money, which he established via his equation of exchange[35]. According to his argument, money does not impact economic aggregates, only prices do[35]. Keynes and other Cambridge economists explained that money indirectly impacts several economic variables by altering the interest rate, which in turn influences investment and cash holdings of economic actors[35]. Keynes' stance is that

unemployment is caused by insufficient aggregate demand, which can be remedied by increasing the money supply to boost expenditure, employment, and financial development. He suggests a balanced combination of monetary and fiscal policies since there are times when monetary policy may not succeed in reaching its goal. The impact of monetary policy on the volume, cost, and direction of money supply[35]. Inflation is primarily caused by changes in the money supply[37]. In the short term, increasing the money supply can reduce unemployment but may also lead to inflation. Therefore, monetary authorities should be cautious when increasing the money supply.

These procedures are intended to control the value, supply, and cost of money in an economy in accordance with the degree of economic activity. An oversupply of money leads to increased demand for goods and services, causing prices to rise and the balance of payments to worsen[36]. Monetary policy management is a challenging task that falls entirely on monetary authorities, who have always shown dedication to its efficient regulation[40]. Monetary policy has recently shown significant improvement, with inflation staying low and domestic production seeing rapid growth. For the initiatives to continue successfully, it is essential to collaborate effectively with fiscal authorities and build trust in the inter-bank market and financial market infrastructure.

Nigeria's monetary policy aims to achieve price stability, balance of payment equilibrium, and high economic growth rates. The CBN guarantees that the country achieves price stability, balance of payment equilibrium, controls the money supply, interest rate, and total credit. Monetary policy may be measured using proxy variables such real interest rate, inflation, official exchange rate, M2 money supply, discount rate, and others[36,37]. The discount rate, also known as the rediscount rate or bank rate, is the interest rate set by a country's central monetary authority for lending reserve money to commercial banks and other financial intermediaries. The fee was once a discount

deducted from the loan amount, but it has evolved into a genuine interest charge, albeit still being referred to as a discount rate.

Monetary policy has been used in Nigeria since the Central Bank of Nigeria was given the task of creating and executing monetary policy by the Central Bank Act of 1958[39]. This role has facilitated the emergence of active money market where treasury bills, a financial instrument used for open market operations and raising debt for government, have grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market. Monetary policy in Nigeria has been defined by two key periods: pre-1986 and post-1986. Prior to 1986, Nigeria relied on direct monetary management to provide price stability, but following the 1986 market liberalization, the focus switched to market processes. Before 1986, several direct monetary tools such selective credit restrictions, administered interest and exchange rates, credit limits, cash reserve requirements, and special deposits were used to address inflation and maintain price stability. Interest rates were fixed at low levels primarily to stimulate investment and foster financial development. Special deposits were sometimes enforced to decrease the surplus reserves and loan creation capabilities of banks[41]. During the specified timeframe, the monetary control system seemed to have been unsuccessful in meeting the established monetary goals due to a decrease in its effectiveness with time. The strict interest rate system and the lack of coordination between fiscal and monetary policy likely significantly limited the expansion of the money and capital markets

Recently, Nigeria has implemented monetary policy based on a medium-term perspective framework. The change aimed to liberate monetary policy implementation from temporal inconsistency issues and reduce excessive reactions to transient shocks. Historically, policies have varied from focusing on monetary aggregates to overseeing and adjusting policy rates to influence

interbank rates and subsequently other market rates as intended[41]. Policy makers and scholars are greatly concerned about the effectiveness of these techniques in stabilizing the economy and promoting growth.

In Nigeria, evidence about the impact of monetary policy on financial development indicates a poor link and is characterized by many "puzzles." A study using a simultaneous equation model in Nigeria revealed that previous domestic monetary policy has not led to development but instead has caused stagnation and ongoing inflation in the country[42]. Monetary policy's effect on growth in Nigeria has been extensively studied using various empirical methods, with varied results. From 1886 to 2009, a study used the simplified Ordinary Least Squared approach to analyze the impact of monetary policy on macroeconomic indicators in Nigeria. The findings indicated that monetary policy had a considerable impact on the exchange rate and money supply, but not on price stability[42]. The impact of monetary and fiscal policies on economic activity in Nigeria from 1970 to 1998 by using co-integration and error correction modeling methods with time series data. Monetary policy has a stronger influence on economic activity in Nigeria than fiscal policy[41]. The government's previous focus on fiscal measures has caused significant distortion in the economy.

Monetary policy impacts economic activity via several transmission channels, which have been extensively studied in the monetarist and Keynesian schools of thought[35]. The monetarist theory states that a change in the money supply immediately causes a change in the actual value of money. An expansionary open market operation conducted by the Central Bank increases the money supply, which in turn boosts Commercial Bank reserves and their capacity to generate credit, thus expanding the money supply through the multiplier effect[35]. Bank and non-bank organizations acquire securities similar to those offered by the Central Bank to decrease the amount of money in their portfolios and boost economic activity in the real economy[36]. This perspective is that the

transmission effect by studying how monetary policy influences the allocation of assets in portfolios, leading to shifts between stock, bonds, commercial paper, and bank deposits[43].

Tight monetary policy impacts liquidity and banks' lending capacity, leading to restrictions on loans to prime borrowers and businesses, excluding mortgages and consumer expenditure[44]. This results in a contraction in effective demand and investment. Keynesians believe that changes in the money supply impact financial market activity, influencing interest rates, investments, output, and employment[35]. Establishment of the idea of capital rationing and highlighted that the willingness of banks to lend impacts the transmission of monetary policy[43]. During tight monetary policy, larger firms tend to displace small firms in the use of both bank and non-bank funds[44,45].

Small businesses face a decrease in loan availability during tight monetary policy, especially in relation to bank-related indicators such as broad money supply[46]. A study on the credit structure for non-government borrowers in China[47]. The study found that variables including loan periods, interest rates, collateral requirements, and lending willingness have impacted the structure of credit.

There are significant evidences supporting the impact of monetary policy innovations on real economic indicators in developed economies such as the United States and certain core European nations[48,49]. There have been many monetary policy regimes in Nigeria. The economy often experienced either expansionary or contractionary monetary policy in an effort to reach its established goals. Despite efforts to achieve macroeconomic objectives through monetary policy, the results have not been sustainable in Nigeria[32,41,42]. There is evidence of high unemployment rates, increased poverty, low standard of living, and high inflation rates, particularly in less developed economies.

The primary objective of monetary policy is to impact short-term interest rates in accordance with policy trends and enable the exchange rate to adapt accordingly[35]. Using the currency rate as a tool of monetary policy requires significant discipline to effectively combat inflation, particularly when it is crucial for the exchange rate to increase to mitigate inflationary pressures[37]. Central banks have learned from the Lucas criticism that they may struggle to sustain persistently low real interest rates since nominal interest rates are likely to increase to counter predicted rising inflation[37]. Similarly, it is often not able to maintain an artificial advantage, such as depressed exchange rates, without encountering increases in salaries and prices. From the beginning, the Central Bank of Nigeria (CBN) adopted a strategy of using undervalued exchange rates to enhance the country's exports and address inefficiencies to establish a competitive edge[50].

The CBN, along with other central banks in developing nations, has frequently emphasized growth as a goal of its monetary policy[51]. However, economic theory, based on the long-run neutrality of money, clarifies that monetary policy is not intended to boost production capacity growth in the economy. Instead, its role is to determine the long-term inflation rate. Fiscal policy regulates growth by influencing national savings via the structural budget deficit, affecting work, savings, and investment through tax rates and structure, and by investing in human capital and physical infrastructure[52]. Monetary and fiscal policy interact to influence aggregate demand, impacting production and employment in the near term. Practically, fiscal policy focuses on lowering the government deficit, while leaving the stability goal mostly to monetary policy.

Central banks often aim to decrease unemployment levels via monetary policy. Monetary policy does affect short-term employment levels[53]. The CBN considers full employment as an aim of its monetary policy, even though it is not mandated by law. Full employment refers to the normal rate of unemployment, often about 5-6%. Full employment is achieved by maintaining the

unemployment rate as low as feasible without exceeding the natural rate of unemployment, while also ensuring that inflation decreases until price stability is achieved[52]. Central banks must prioritize job creation because to the significant effect economic downturns have on employment levels, since they have control over the tools that affect short-term employment. There is no contradiction between the aims of maintaining stable prices and generating employment since monetary policy is anticipated to have an impact on prices in the long term. In the long term, its effect on employment is minimal, suggesting that only the goal of price stability may be effective in the long term. Price stability is the primary and most genuine goal of monetary policy.

Over time, the Bank's monetary policy goals have revolved around achieving low inflation and price stability, real output growth, reducing unemployment, maintaining a healthy balance of payments, and increasing savings and credit flow to key sectors of the economy.

Overview of Monetary Policy Framework in Nigeria

Between 1959 and 1979, the Central Bank of Nigeria had a range of monetary policy options available, including both quantitative and qualitative measures. Quantitative measures involve the amount, volume, and value of money and credit[55]. This includes Open Market Operations (OMO), which is the purchase and sale of government debt securities by monetary authorities, changes in reserve requirements, special deposits by financial institutions, and mandates to purchase certain stabilization securities. Qualitative monetary policy strategies focus on guiding the allocation and flow of credit. These mostly consisted on moral persuasion and selective credit controls.

From 1959 to 1991, the Bank refrained from using OMO as a monetary policy tool since the money and capital markets were underdeveloped throughout that era. Interest rate adjustments were mostly made by direct measures outlined in monetary policy guidelines, rather than being

influenced by demand and supply variables[41]. Special deposits, as a monetary policy tool, were seldom used. While banks were required to make special deposits with the CBN at times, it was not for monetary management but to achieve other monetary policy objectives like the revenues of indigenization.

In 1976, stabilization securities were introduced based on the Anti-inflation Taskforce's suggestions to incentivize banks to keep accepting deposits as a tool for monetary control[55]. The credit rules adopted in 1964 were the most efficient monetary management strategy in Nigeria throughout the study period. Since 1969, the yearly credit guidelines have been a permanent aspect of Nigeria's monetary policy. The monetary policy techniques in Nigeria transitioned from exchange rate targeting before the creation of a national currency to monetary targeting during the oil boom phase of 1974-1976.

Central banks primarily influence the financial system by controlling bank reserves. The central bank buys or sells Treasury Bills in the open market to decrease the amount of reserves in the banking system or to deplete the stock of reserves[56]. The central bank selects the tool to regulate the money supply, although imprecisely, due to the absence of a specific definition of money that can be perfectly controlled by the central bank. The central bank can regulate any monetary aggregate within certain acceptable boundaries, assuming all other factors remain constant. Alternatively, the central bank may precisely manage short-term interest rates based on how quickly short-term interest rates adjust to its anchor rate, which is the rate banks pay to borrow from the central bank overnight. The central bank may focus on bank reserves, various measures of the money supply (M2, M3, or M4), or short-term interest rates[36].

Many central banks that focus on the aggregates often aim to increase growth in the monetary aggregates. In the long term, the money supply is believed to be linked to the price level, serving

as a nominal anchor for the economy to prevent drastic fluctuations in the price level. Money has a long-term influence on prices that short-term interest rates do not. If a money targeting technique were successful, quick feedback on the impacts of monetary policy might be easily obtained due to the delays in monetary policy. Shortly after the central bank adjusts bank reserves, we see the impact on money supply. If this were a dependable indicator of the future influence on the economy, it would provide a useful preview of the monetary policy direction.

The link between various indicators of money supply and factors like inflation and employment has grown ambiguous, resulting in imprecise guidance for monetary policy and its goals[35,37]. The CBN is contemplating shifting its emphasis from monetary targeting to embracing inflation targeting. It became unavoidable when monetary targeting was shown to be ineffective. The Bank also has to address the timeliness of monetary policy, namely the delays in its implementation. Monetary policy delays are often extensive. Tight monetary policy has an immediate influence on GDP, which then extends over many quarters.

Before 2003, the Central Bank of Nigeria mostly used direct controls as the principal method for monetary policy. The restrictions implemented included credit limitations and sectoral allocation, showcasing a proactive commitment to controlling the financial environment (CBN, Overview of Monetary Policy in Nigeria).

From 1986 to 2001, Nigeria's monetary policy shifted towards a short-term framework. During this era, the main emphasis was on targeting short-term monetary aggregates, namely Money Supply (M1) and Treasury Bills (TBs). This strategic focus aims to optimize the monetary environment by carefully monitoring and impacting short-term financial indicators[19].
The Medium-Term Framework (MTF) was implemented in 2003 as a strategic change in Nigeria's monetary policy. The MTF aims to accomplish medium-term macroeconomic goals by using a

monetary targeting system as outlined in the CBN's Monetary Policy Implementation Framework and Outcome for 2023. This strategy emphasizes looking forward and setting goals, focusing on the significance of maintaining economic stability over a long period. The Monetary Policy Rate (MPR) is a crucial policy tool that indicates the direction of interest rates in the economy, according to the Central Bank of Nigeria's document[56]." The Monetary Policy Rate (MPR) is determined by the Central Bank of Nigeria (CBN) and significantly affects borrowing and lending rates in the financial sector, therefore affecting the total economic activity.

The Monetary Policy Committee (MPC) of Nigeria is in charge of creating and executing monetary policy. The committee convenes twice a year to evaluate economic circumstances, analyze emerging trends, and modify the Monetary Policy Rate (MPR) as required[56]. The MPC's discussions and choices are crucial in directing the path of monetary policy to line with overarching economic objectives.

Following the 2008 financial crisis, decisive actions were implemented between 2008 and 2010. To tackle inflation and mitigate financial crisis risks, a proactive strategy including liquidity mop-up and decreases in the Monetary Policy Rate (MPR) was executed[5]. Between 2011 and 2015, the emphasis changed to handling fluctuations in currency rates due to decreasing oil prices. During this time, there were slow but steady rises in the MPR, indicating an adjustment in monetary policy to tackle new difficulties as reported by the Central Bank of Nigeria in their 2015 Annual Report[19].

Between 2016 and 2019, Nigeria's monetary policy shifted towards tightening to control inflation. Despite economic downturn, higher Monetary Policy Rates (MPRs) were enforced to focus on maintaining price stability and tackling inflation worries[20].

2020 was a significant year due to the emergence of the COVID-19 pandemic[11]. The unique worldwide problem required Nigeria's monetary policy to become more flexible. The attention turned to aiding economic recovery and handling exchange rate pressures, demonstrating the flexibility of the monetary policy framework during exceptional situations[11]. Despite many policy measures being implemented, ongoing issues such increasing inflation, fluctuating currency rates, and structural limitations still influence Nigeria's monetary policy environment. The Central Bank of Nigeria (CBN) is dedicated to tackling these issues and adjusting its policies to maintain economic stability and continuous development[12]. Nigeria's monetary policy evolution since 2008 demonstrates a dedication to flexibility in response to changing economic circumstances. Each phase highlights the dynamic nature of monetary policy formation in Nigeria and the continuous pursuit of economic resilience via unique challenges and solutions[8].

The COVID-19 pandemic significantly affected Nigeria's economy, leading to a 2.1% recession in 2020[11]. The economic slowdown in 2020 was mostly due by disturbances such as lockdowns, travel restrictions, and global supply chain issues, as reported by the CBN Annual Report. Inflationary pressures arose from supply chain disruptions and increased government expenditure to counter the pandemic's impact. The intricacies led to inflation above the Central Bank of Nigeria's goal range as stated in the CBN's Monetary Policy Communiqué in different years.

The Central Bank of Nigeria said that it maintained its monetary policy rate at 11.5% at its January 2021 meeting. Headline inflation increased to 15.75% in December, reaching a level not seen in almost three years. The situation was mostly caused by a lack of dollars, increasing Islamist assaults in agricultural regions, and ongoing issues from the COVID-19 epidemic[11]. In the third quarter of 2020, Nigeria entered its second recession in four years due to the combined effects of COVID-19 limitations and low oil prices.

Nigeria reacted to the post-pandemic scenario with strategic measures implemented by the Central Bank of Nigeria (CBN) to tackle problems and boost economic recovery. A gradual normalization process began, characterized by an increase in monetary policy to address worries about inflation. This required modifications to important policy tools to achieve a careful equilibrium between price stabilization and economic growth[56]. The current problem involves balancing economic recovery and inflation management, which is crucial for maintaining stability throughout time[42].

Post-pandemic efforts are directed on boosting non-oil industries and promoting economic diversification. Policy actions are being implemented to address vulnerabilities highlighted by the epidemic and to provide a stronger and more varied economic foundation. The measures are in line with the overarching objective of promoting sustainable and equitable development after the epidemic[42].

The CBN used essential policy tools to address the challenges and possibilities arising from the post-pandemic environment. The Monetary Policy Rate (MPR) increased from 11.5% in May 2020 to 16.5% in July 2023[57]. This adjustment aims to address inflation and indicate the trend of interest rates in the economy, as stated in the CBN's Monetary Policy Communiqué from July 2023. Liquidity management measures such as Open Market Operations (OMO) and Cash Reserve Ratio (CRR) modifications are essential for controlling money supply and interest rates to ensure stability in the financial system[57]. The Targeted Credit Facility (TCF) and other development financing measures were implemented to provide cash to certain sectors, stimulating economic activity and encouraging inclusive growth.

Nigeria's economic recovery after the epidemic demonstrates a flexible and responsive approach by the Central Bank of Nigeria[56]. Strategic modifications to major policy tools and focused development financing efforts reflect the challenge of balancing inflation control, economic

stimulation, and diversification promotion. Enduring inflation is a significant concern, notwithstanding the Central Bank of Nigeria's (CBN) attempts to restrict monetary policy[37]. Inflation is consistently over the CBN's goal range, requiring continuous attention and smart changes to manage inflation levels[37].

Global uncertainties, including geopolitical tensions and the prospect of rising global interest rates, add an additional layer of complexity to Nigeria's economic considerations. The global economy's interconnectedness necessitates the Central Bank of Nigeria to consider external factors when creating policies and strategies to tackle local issues[47].

Nigeria's Central Bank (CBN) must prioritize flexibility and adaptability in its policy approach for the future. The economic environment is always changing, and the Central Bank of Nigeria must adapt to these changing situations. It necessitates a quick and forward-thinking approach to successfully tackle new problems and possibilities[48].

Dealing with structural obstacles, such deficiencies in infrastructure, is seen as a crucial aspect of Nigeria's economic path. Implementing structural changes to address obstacles to growth is crucial for promoting continuous economic progress. This includes focused initiatives to improve infrastructure, simplify regulatory procedures, and provide a conducive climate for companies to succeed (CBN, Economic and Financial Review, different years).

Improved communication is crucial for the CBN to establish public trust and confidence in its policies. Transparently explaining policy goals, difficulties, and decision-making reasons promotes public comprehension. This enhances public knowledge and support, hence strengthening the impact of monetary policies as stated in the CBN's Monetary Policy Communiqué over several years[56,57]. The issues and factors highlighted emphasize the intricacy of Nigeria's economic

environment. Dealing with inflation, financial limitations, and worldwide concerns demands a flexible and complex strategy. In the future, the Central Bank of Nigeria's emphasis on adaptability, structural changes, and improved communication would be essential for guiding the nation towards continuous economic expansion. The sources provided offer in-depth information about the particular obstacles encountered by the CBN and the factors influencing its policy.

Monetary Policy Effectiveness

The concept of monetary policy effectiveness has gained a lot of research prominence in recent times as economies around the globe continue to search for ways to improve the effectiveness of economic policy in general[51]. The importance of monetary policy effectiveness has increased specifically on account of the need to determine whether central banks, of both developing and developed countries, can exert strong and systematic effects on aggregate demand through monetary policy. Policy, in this setting, is considered effective when it is capable of influencing a predetermined target in the manner and intensity intended. Testing for the effectiveness of monetary policy, despite having been around for a while, has mostly focused on identifying which of the traditional transmission mechanisms of monetary policy is prominent in a particular economic setting without much attention to the catalytic factors. While monetary policy effectiveness seems visible as regards developed economies, the same cannot be necessarily said of developing economies[51,52]. For the developed economies, for instance, the interest rate channel of monetary transmission is perceived as the most effective, whereas the bank-lending channel is believed to work for developing economies[57]. The bank-lending channel seems to be considered the route for effective monetary policy in developing countries because these economies are mostly bank dependent, while lacking the other frameworks, namely bond markets, stock markets et cetera on which the other transmission mechanisms are deemed to work.

A significantly large literature has emerged in recent years with a focus on the empirical measurements of the effects of monetary policy on 10 aggregate demand and price levels, the beneficiaries have been mostly advanced economies[52]. They go on to intimate that most of these studies have tended to confirm the effectiveness of monetary policy in influencing aggregate demand and prices, but are quick to add that there are strong reasons to believe that similar effects may not necessarily hold for countries with fundamentally different financial structures[58,59].

2.1.2.1 Policy Interest Rates

Interest is the expense incurred while borrowing money or the benefit gained from saving[60]. An interest rate is a percentage applied to the principal amount borrowed or saved. It is the fee imposed by a lender on a borrower for using the lender's assets, in addition to the main amount. If a lender deems a loan low risk, it will come with a reduced interest rate. Conversely, a loan with high risk will entail a higher interest rate. Consumer loans often use an annual percentage rate (APR). This does not involve compound interest. Bank interest rates are influenced by several variables, including economic conditions. Lenders decrease their charges when demand is low and increase them when demand is high. Banks lower interest rates to stimulate lending[61]. Supply fluctuates in response to economic circumstances. A drop in the supply of bonds pushes the supply curve to the left, resulting in a rise in bond prices (leading to a fall in the interest rate) and a decrease in the equilibrium amount. When the demand for bonds decreases, prices and quantities also decline, causing the interest rate to climb. The central bank of a nation often sets the interest rate, which each bank use to calculate the range of APR it provides. High interest rates imposed by the central bank lead to an increase in the cost of debt. High loan costs deter borrowing and dampen consumer demand. Interest rates often increase in tandem with inflation[62]. It is a component of the monetary policy measures used to achieve the Government's goal of maintaining

low and stable inflation. The bank rate sets the interest rate given to commercial banks that have deposits from customers. It impacts the interest rates that banks apply to loans and savings accounts. As interest rates decrease, individuals become more inclined to take out loans for significant expenses like homes or vehicles. Reduced interest payments for customers may lead to higher disposable income, perhaps stimulating greater economic activity via heightened expenditure[62,63].

Interest rate reform, a component of financial sector liberalization, aimed to enhance efficiency and promote financial deepening. Financial sector changes in Nigeria began with the liberalization of interest rates[63]. Before this time, the financial system functioned under financial regulations and interest rates were considered to be suppressed. Financial repression occurs primarily when a government sets a limit on deposit and lending nominal interest rates at a low level compared to inflation[62]. Low or negative interest rates impede the mobilization of savings and their allocation via the financial system. This adversely affects both the amount and quality of investment, thereby impeding economic progress. The interest rate revision was expected to boost domestic savings and increase the availability of loanable funds in banking institutions. The issue is that the interest rate structure in Nigeria, may discourage saves and hinder development due to the observed connection between savings, investment, and economic growth[63,64].

Interest rates in many sectors of the Nigerian economy have fluctuated significantly under government regulation[64]. The special interest rates were established on the assumption that without intervention, the market would neglect some key industries. Interest rates were modified by the "invisible hand" to encourage higher levels of investment in chosen areas of the economy. The agricultural, manufacturing, and solid mineral sectors were prioritized, with deposit money banks instructed to offer preferential interest rates on loans to promote small-scale industrialization, seen

as a driver of financial development[64]. Following the controlled interest rate regime came the interest rate reform, a policy developed during the financial sector liberalization[63,64]. The strategy was implemented to enhance efficiency in the financial industry, leading to increased financial depth. Financial sector changes in Nigeria began with the liberalization of interest rates, financial repression is triggered when a government sets a maximum limit on deposit and lending interest rates at a low level compared to inflation. Low or negative interest rates discourage saving and the allocation of saved funds through the financial system. This adversely impacts both the amount and quality of investment, thereby affecting financial development[65].

Relationship between Interest Rate and Financial Development

Interest rate and monetary policy are crucial factors for the financial development of a country[61]. The central bank of a nation is typically responsible for creating and carrying out all monetary policies within that country[62]. The banking business is tightly regulated worldwide due to its operations, purpose, and function. Banks act as financial mediators by transferring money from sectors with excess capital to those with deficits, thereby facilitating economic activity[65]. Banking ethics require that money held by the investing public or depositors be handled efficiently and effectively to enhance public trust and minimize suffering.

The interest rate theory has been firmly established since the early 1980s[66]. US financial development would decline with increasing interest rates, emphasizing the need for lower interest rates to sustain financial development[66]. The concept of interest rates is utilized in dynamic stochastic equilibrium models and dynamic panel studies to explore the relationship between financial development and growth. These studies suggest a negative correlation between interest rates and growth, indicating a causal relationship from rates to growth.

The discussion over the specific impact of interest rates on financial development is still unresolved. Previous studies demonstrate significant disparities in the use of interest rates as a strategy for stimulating economic expansion[60,64]. Research indicates that lowering interest rates via expansionary monetary policy may stimulate financial development by boosting economic activity, resulting in a positive and statistically significant influence on the economy. Slow financial development caused by a restrictive monetary policy with high interest rates might result in a decrease in financial development owing to the large negative influence of interest rates[67]. A meaningful correlation between interest rates and financial development[67]. Critics argue that cutting interest rates to boost aggregate demand may have limited effectiveness due to credit market disruptions, especially in developing nations. Conversely, others argue that increasing the real interest rate will encourage saving and enhance the effectiveness of investment, resulting in financial development[67]. Every economy aims for continuous economic progress, but this goal is hindered by fluctuating and increasing interest rates[66]. Interest rate levels and velocity are key factors in evaluating the effects of financial deregulation on financial development[33]. A high interest rate environment significantly impacts the performance and returns of investments[67].

In the past few years, interest rates in Nigeria have consistently been one of the highest in Africa, with the current Monetary Policy Rate (MPR) being at 18.75% as of December 2023[68]. This is the benchmark interest rate established by the Central Bank of Nigeria (CBN) to impact other interest rates in the economy[68]. The MPR has been rising in recent years, partially to address excessive inflation. Critics attribute the high interest rates in Nigeria to the extravagant spending and macroeconomic policy shortcomings of past and present administrations[67]. Inefficient economic policies have led to persistent budget deficits, which have been funded by successive governments through heightened borrowing. This heightened borrowing therefore leads to a rise in interest rates.

According to standard Keynesian theory, there is a causal relationship between budget deficits and interest rates[35]. This leads to the crowding out hypothesis, which suggests that higher government borrowing to cover budget deficits can result in notable rises in the real interest rate. Consequently, this can decrease a country's economic lending capability and hinder business investments. Although the viewpoints varied significantly, the prevailing belief is that budget deficits are associated with high interest rates, which are detrimental to financial development. Anecdotal evidence in Nigeria indicates that the interest rate level may have a detrimental impact on financial development, but this claim has not been scientifically verified.

OECD's primary economic indicators show that investment plays a crucial role in a robust economy. Conversely, elevated interest rates deter investment, impact bond prices in financial markets, and impede growth[69]. Patterson and Lygernu from the Directorate-General for Research in Europe state that changes in the Long-Term Rate (LTR) would affect the economy, notwithstanding the complexity and uncertainty surrounding the transmission mechanism that sets the LTR. Conversely, it impacts investment negatively, leading to a decrease in aggregate demand and productivity. Conversely, a decrease in the long-term interest rate will lead to a rise in investment, demand, and output. The structure of an economy and demand mechanisms also have a role in influencing. A rise in bond yields leads to a fall in borrowing demand[70]. The GDP growth fell to 0.75% due to a 1% increase in the interest rate, but failed to recover in subsequent quarters. However, a decrease in long-term interest rates has a beneficial impact on economic expansion[35]. Keynes demonstrates that long-term interest rates have shifted from 7.2% to 7.8% between 1994 and 1999, increasing in the actual economy[35].

2.1.2.2 Exchange Rate

An exchange rate is the value of one nation's currency in relation to another currency[71]. It influences the comparative pricing of local and foreign products, as well as the extent of external sector involvement in global commerce. The Real Exchange Rate refers to the nominal exchange rate adjusted for different rates of inflation between the two currencies[71]. It refers to the exchange rate of a currency, expressed in constant value terms to account for the effects of inflation[72]. The many interpretations of the authentic exchange rate are divided into two main categories. The first group defines the actual exchange rate based on Purchasing Power Parity, whereas the second group is defined in terms of tradable and non-tradable goods.

Exchange rate policies in emerging nations may be contentious due to the necessary structural changes, such decreasing imports or increasing non-oil exports, which often lead to a devaluation of the nominal exchange rate. Domestic adjustments, because of their immediate effect on pricing and demand, are seen as harmful to the economy[71,73]. In emerging countries reliant on imports for production and consumption, the distortions caused by an inflated exchange rate regime are not a topic of controversy.

The discussion centers on the extent of volatility in the exchange rate when confronted with internal and external shocks[73]. There is a widely accepted belief that devaluation or depreciation may increase domestic output by encouraging the net export sector. This is shown by the rise in international competitiveness of local industries, causing a shift in consumer expenditure from expensive imported items to home products. The effectiveness of currency depreciation in improving the trade balance relies on redirecting demand appropriately and ensuring the local economy can fulfill the increased demand by producing more products[74]. Thus, variations in

exchange rates are expected to influence economic performance. It is essential to assess the impact of exchange rate variations on production growth and price inflation.

Development of Exchange Rate Policy in Nigeria.

An exchange rate policy aims to provide a steady and suitable value for the exchange between the domestic currency and the foreign currency used in trade agreements. In Nigeria, numerous strategies and solutions have been used throughout the years to attain this purpose[71]. The goals of an exchange rate policy are to establish a suitable exchange rate and maintain its stability[71]. Efforts have been made throughout time to accomplish these aims by using different approaches and alternatives to improve efficiency in the foreign exchange market. Nigeria's exchange rate arrangements have evolved from a fixed regime and eventually to several forms of the floating regime starting in 1986 with the deregulation and implementation of the structural adjustment plan (SAP)[72].

Since the SAP, Nigeria has mostly adopted a managed floating exchange rate regime without a firm commitment to defending a certain parity[73]. The Dutch Auction System (DAS) was reintroduced on July 22, 2002, after the flexible exchange rate mechanisms failed to maintain exchange rate stability[73]. The goal of the DAS was to reduce the parallel market premium, preserve the declining foreign reserves, and provide a fair exchange rate for the naira. The Direct Auction System (DAS) contributed to stabilizing the naira exchange rate, narrowing the premium gap, preserving external reserves, and reducing speculative behaviour among approved dealers. The foreign exchange market has been generally stable since 2003.

The CBN introduced the Wholesale Dutch Auction System (WDAS) on February 20, 2006 to liberalize the market, reduce the arbitrage premium between the official interbank and bureau de

change sectors, and achieve convergence[74]. The purpose was to strengthen the benefits of the retail Dutch Auction System and enhance the foreign exchange market to establish a more accurate exchange rate for the naira[74]. Authorized dealers were allowed to trade in foreign currencies on their own accounts for subsequent selling to their clients. These exchange rate systems have impacted economic performance to some extent.

Inadequately handled exchange rates may have catastrophic effects on financial development[75]. As developing nations become more integrated into the global economic system and participate in international production networks, the regulation of currency rates has become more important. Exchange rate policy may impact macroeconomic variables including GDP, aggregate demand, inflation, financial development, employment, and income distribution. Exchange rate fluctuations may directly impact a country's competitiveness and have the ability to enhance its trade performance[76]. South Africa has an open economy that engages in both exporting and importing products and services. This requires effective management of the currency rate. There has been a prolonged discussion in several nations over the optimal level of foreign exchange rate flexibility. One perspective in the discussion argues that exchange rates should be decided solely by market forces without any foreign exchange intervention or central bank monetary policy targeting[76]. Another viewpoint is that the central bank should have authority over the foreign currency market[77]. One perspective believes in the superiority of markets over the government in setting exchange rates, while the other argues that the central bank can effectively manage issues like currency volatility and exchange rate misalignment[78].

Exchange rate regime and interest rate continue to be significant topics in international finance and emerging countries, as more economies adopt trade liberalization as a necessary condition for financial development[76]. Extensive theoretical and empirical research exists to determine the most

effective economic system that enhances financial development and has major effects on macroeconomic and financial factors. In Nigeria, the exchange rate and interest rate policies have transitioned from regulated to deregulated regimes throughout time[79]. The effects of these measures on financial development in Nigeria are still a topic of debate. Some writers contend that a high cost of borrowing impedes investment in the economy[79]. The Nigerian economy faced challenges due to the impact of a worldwide economic slowdown on world commodity prices[71]. The decline of oil prices subsequently led to structural imbalances that negatively impacted the Nation's income. Consequently, there were significant fiscal deficit, substantial foreign current account deficit, increasing unemployment, and inflation rate, all occurring alongside a decrease in domestic investment. The worldwide economic and financial crisis, which originated in the USA and expanded to other regions, is now affecting the Nigerian economy, especially its banking sector[75]. Nigeria's policy makers respond to external shocks by introducing various economic reforms[79]. The National Economic Empowerment and Development Strategy (NEEDS) was implemented in 2004 with a similar aim[76]. The main aim of this comprehensive program is to reduce young unemployment and control the increasing prices in the economy. The current financial development plan is represented by the tagline "Vision 20:2020." Although the macroeconomic conditions seem steady, concerns persist over economic fundamentals such as inflation, savings, investment, growth, unemployment, and poverty. Therefore, policymakers and development partners focus on macroeconomic policies concerning currency rates, interest rates, domestic investment, and financial development[76].

Factors that Determine Exchange Rate.

Inflation Disparities: An economy seeing a consistent decrease in inflation often results in a rise in the purchasing power of the domestic currency when compared to foreign currencies. Nations with

a greater growth rate intentionally decrease their currency in proportion to the market value of their trading partners. This is often associated with a higher credit cost[80]. Interest rate differentials are closely linked to financing costs, expansion, and exchange rates. Central Banks may influence the general price level and purchasing power of the domestic currency by controlling financing costs, which in turn impacts inflation and the country's exchange rate. Higher interest rates provide lenders in an economy with a superior degree of return on their investments in comparison to other countries. Higher interest rates attract foreign investment and lead to an increase in the currency rate. That is, the local currency appreciates in value relative to other nations' currencies.

Trade imbalances, the current record represents the balance of commerce between a nation and its trading partners, including all transactions related to goods, services, investments, and profits[81]. A setback in the present record indicates that the government is investing more in new commerce, namely imports, than it is generating from exports. Therefore, the nation must seek financing from unexpected sources to make up for the shortfall. This high demand for foreign currency lowers the country's exchange rate, making domestic products more affordable for foreigners and increasing the cost of importing fresh resources, which might hinder local financial development[82].

A nation's debt rating significantly influences its exchange rate[83]. Countries engage in large-scale deficit financing to carry out national infrastructure projects and provide financial support for the government. Countries with significant government debts are less attractive to external investors, notwithstanding the positive impact of stimulating the domestic economy via such operations. A significant public duty might lead to growth. The government might increase the money supply by printing additional currency to offset some of the debt, leading to inflation in the economy. If the government cannot cover its deficit through domestic means like selling securities and increasing money supply, it must increase the availability of securities for sale to foreign investors[84]. This

action would decrease the price of these securities and reduce the value of the domestic currency compared to foreign currencies. Therefore, the debt will be managed and settled with fewer actual dollars in the future. In 2017, international investors are less willing to rely on government safeguards from their home country if there is a substantial risk of default by the host country[71].

Relationship between Exchange Rate and Financial Development

The exchange rate has a significant impact on various macroeconomic variables in an economy, including domestic price levels, profitability of traded goods and services, resource allocation, and investment decisions[84,85,86]. This is why both monetary authorities and private sectors strive to maintain stability in these variables, as suggeste[87]. Exchange rate fluctuations have become a fundamental aspect of global economic operations. Managing this variable effectively is a key factor in shaping the economic policies of many nations, as supported[88]. The exchange rate is a crucial macroeconomic element for developing economic policy. This is because these measures significantly expedite the achievement of established macroeconomic objectives. In Nigeria, the goals include maintaining price stability, attaining balance of payment equilibrium, ensuring full employment, promoting equitable distribution of income, and fostering financial development and development.

The Nigerian economy faces challenges related to currency rate and interest rate fluctuations[89]. These two factors are crucial in every economy since they influence the consumption and investment decisions made by economic agents[89]. Improperly handled dynamic movements may lead to serious effects in the economy. These oscillations are undesirable in the economy since they elevate risk and uncertainty in both local and foreign transactions, thereby hindering investment and commerce. The Nigerian economy is particularly susceptible to changes in currency rates and interest rates since it relies heavily on oil as its main product and is highly

dependent on capital inflows[89]. This presents difficulties for policymakers responsible for achieving macroeconomic stabilization objectives.

Nigeria used a fixed exchange rate system from Independence until 1986, when it was eliminated and replaced with a flexible exchange rate system. The flexible exchange rate regime is a continuation of the Structural Adjustment Programme (SAP) in Nigeria, aimed at devaluing the naira to promote exports[71,90]. Nigeria is recognized as an economy heavily reliant on imports, especially for its capital goods. The manufacturing sector, which was the focus of exchange rate depreciation to boost exports, is mostly controlled by multinational businesses and hindered by poor capacity utilization. This industry is significantly hindered by high borrowing rates, expensive raw materials, increasing inflation, devaluation of the naira, foreign currency shortages, and customer reluctance to purchase local goods[89]. Devaluation of the currency rate is more of a burden than a benefit for this industry. A concerning trend in the depreciation of the naira currency rate, particularly during the SAP era[90]. People have consistently demanded the stabilization of the currency rate to be on level with the United States dollar. The author argued that the stability of the exchange rate enables the achievement of both internal and external balance simultaneously. The selection of an exchange rate regime is crucial for financial development, but it is contingent upon the financial development level of the specific country[73]. Industrialized countries with developed and comprehensive financial markets are able to effectively handle real and financial shocks, resulting in their financial development rate being less influenced by their selection of exchange rate systems. A more flexible exchange rate system allows an economy to respond more quickly, although it is weakly linked to somewhat better growth rates. In developing and rising economies like those in Asia and Africa, which have underdeveloped financial markets and incomplete

markets, they struggle to handle real and financial shocks[71,74,89]. Therefore, the selection of an exchange rate regime is crucial[90].

Emerging nations are more advantageous in using flexible exchange rate regimes[76]. Nations in the early stages of financial growth and integration should opt for set or somewhat inflexible regimes[77]. Developing and emerging market economies have a nonlinear connection between growth and regime choice[78]. They found that fixed and managed float regimes are linked to the strongest growth rates. They also noted that the choice of government system did not impact the financial development rate of advanced European nations. It may be concluded that more flexible systems are often linked to somewhat greater development rates in that location. The implementation of SAP in Nigeria and concluded that the unique characteristics of the Nigerian economy limited the effectiveness of currency depreciation in achieving desired outcomes[71]. The research examined the correlation between fluctuations in the exchange rate and the growth of domestic production in Nigeria[84]. It represented the growth of domestic output as a linear function of changes in the average nominal exchange rate. He used dummy variables to represent the time periods when currency depreciation occurred. The empirical findings indicated that all coefficients of the primary explanatory factors had negative signals. A research on how the real exchange rate affects the development of non-oil exports in Nigeria[91]. The study emphasized the influence of real exchange rate misalignment and volatility on the growth of non-oil exports. He used the classic trade theory model to analyze the factors influencing export growth. He also used two measures of real exchange misalignment: one based on the departure from purchasing power parity (PPP) and the other based on the model's assessment of equilibrium real exchange rate (ERER). He noticed that regardless of the many ways misalignment was measured, both real exchange misalignment and volatility had a negative impact on the development of Nigerian nonoil exports[91]. A strong

and meaningful correlation between the index of industrial output and actual exports[91]. A 1% increase in actual exports results in a 12.2% increase in the industrial production index. The policy of deregulation had a favorable influence on exports by causing the currency rate to depreciate.

2.1.2.3 Money Supply

Money Supply is the whole amount of monetary instruments accessible for use in a society's economic activities[70]. The traditional definition of money supply consists of two main components: Currency held by the public and Demand deposits held by the public. Two important points should be highlighted about the money supply in the economy. The money supply is the aggregate amount of money accessible to the general population within the economy at a certain moment. Money supply is a static measure, unlike national income which is a dynamic representation of the value of goods and services generated over a certain period, often a year[71]. Money supply specifically denotes the total quantity of money owned by the public[72].

A study identified four ways that have tried to conceptualize money supply and the makeup of a country's money stock[73]. The Conventional Approach considers money supply from a functional perspective, focusing on the particular role of money. Money is considered a universal kind of buying power that is accepted as payment for goods and services[73]. The money stock of a nation consists of media that easily allow exchanges and are generally accepted. These would primarily consist of cash (C) and demand deposits that may be withdrawn by check (DD) generated by commercial banks.

Theoretical ideas on how money supply affects financial development may be traced back to Classical and Keynesian monetary theories, as summarized in the Quantity Theory of Money[35]. The Classical monetary theory, based on Irving Fisher's equation of exchange, suggests a direct

correlation between the money supply and the price level. A rise in the money supply results in a corresponding increase in prices, thereby reducing the purchasing power of money. The Fisher equation of exchange, MV= PQ, describes the relationship between the amount of money (M), the velocity of money (V), the price level (P), and the quantity of real goods sold (Q)[35].

Keynes opposed the Classical quantity theorists by introducing a revised quantity theory of money that highlighted the connection between monetary theory and output. Variations in the money supply result in indirect and non-proportional impacts on prices[35]. Keynes posits that when there is unemployment, variations in production are directly related to variations in the money supply, with no impact on prices. At full employment, prices vary directly with the amount of money.

Various interpretations on the inflation-growth link have been proposed by Classical, Keynesian, Neo-Keynesian, Monetarist, and Endogenous growth theorists. Keynesian and Neo-Keynesian theories propose a direct correlation between inflation and growth in the aggregate supply-aggregate demand (AS-AD) paradigm[37]. Short-term, the upward-sloping AS curve indicates that changes in aggregate demand impact both price and production. Various variables including expectations, labor force dynamics, production factor pricing, and fiscal or monetary policies affect this dynamic connection.

In the long term, variables affecting the economy's steady state are expected to balance out. Producers adapt their outputs in response to early shocks like inflation, which ultimately sustains financial development. Some economists, inflation may have a beneficial effect on financial development, particularly when contracts between businesses and consumers set future pricing, allowing production to continue despite rising costs in the market[37,96]. These theories provide valuable understanding of the intricate relationship among money supply, inflation, and financial

development, helping policymakers promote macroeconomic stability and sustainable development.

Relationship between Money Supply and Financial development in Nigeria

The correlation between money supply and financial development has garnered more attention in the area of monetary economics in recent years. Economists have varying opinions on the impact of money supply on financial development. Some believe that fluctuations in the money supply are crucial for financial development, as countries focusing on studying aggregate money supply tend to experience significant variations in their economic activities[97]. However, others doubt the impact of money on gross national income[98].

A correlation between the money supply and financial development or activity in Nigeria[92]. Nigeria has managed its economy by adjusting its money supply throughout time. Following the impact of the oil price crash in 1981 and the balance of payment deficit at that time, a variety of stabilization strategies were used, including fiscal and monetary policies. Decreasing the money supply by raising interest rates would result in a decrease in gross national product (GNP)[99]. The concept that the money supply fluctuates with economic activity is relevant to the Nigerian economy. Money supply significantly impacts economic activity in both established and emerging economies, as previously stated. The insufficient supply of monetary aggregates, especially money stock, has hindered many African nations from achieving growth and development. Many experts attribute the failure of monetary policies to stimulate financial development on the government and its agencies due to inadequate implementation and lack of sincerity among policy implementers[93,97,99].

There is still a significant amount of empirical and theoretical research needed to fully understand the link between financial development and the rate of money supply[35]. There is a significant body of literature on the interplay between monetary policies and the association of monetary and fiscal policies in influencing the money supply. However, this research has not been widely integrated into mainstream monetary economics literature.

Policymakers have acknowledged that challenges in obtaining current literature on money supply may be due to the inaccessibility of numerous routes via which money is given[99]. The channels are used by the federal government via tax cuts and budget expenditures, as well as by the Central Bank of Nigeria through monetary policy. However, it is important to determine the strength of the ideas around the impact of the specified policies on the money supply in the economy. Government backing has caused policymakers to believe that central banks do not have complete control over the supply of money in an economy. The elements and effects of various monetary policy choices in the Nigerian economy. The initial effort to define the concept of money supply in the Nigerian economy. They agreed that the definition of money supply should be determined by the financial system's development stage and the adopted concept of money. This definition serves as a guideline for measurement and is influenced by the institutional framework of the economy[35].

A monetary economist contended that a widespread decrease in interest rates would boost the accessibility of consumer goods and investment loans[100]. Therefore, decreasing government spending would counterbalance the impact of this rise. Similarly, another monetary economist had his perspective on the impact of monetary policy, that due to the undeveloped Nigerian money market, monetary policy tools are not an effective strategy for addressing inflation in Nigeria[93]. The perspective has become a definitive part of a small but well-studied collection of literature aimed at enhancing our understanding of money supply[93]. A comprehensive grasp of the ideas put

forward by past authors on the supply rate of money, its components, and the adverse effects on an economy, notwithstanding the existence of other related theories[35]. Economists have varying opinions on the impact of money supply on financial development[92]. Some believe that fluctuations in the money supply are crucial for financial development, and nations that dedicate more effort to researching the behavior of aggregate money supply tend to have more stable economic activity[101].

Financial markets begin to expand when the economy reaches the intermediate stage of development, and continue to develop as the economy matures. Economic expansion leads to heightened financial development. Financial development may not occur without a sufficient quantity of money supply credit and suitable financial circumstances[102]. Decreasing the money supply by raising interest rates would reduce the gross national product (GNP). The concept that the money supply fluctuates in accordance with economic activity is relevant to the Nigerian economy[93].

The impact of financial debt, symbolized by money in circulation, on financial development may occur via three main pathways: A rise in financial debt may enhance the efficiency of financial intermediation. Financial institutions become more efficient at distributing resources and promoting investment, leading to increased economic activity and fostering development[69]. Furthermore, financial debt may improve the effectiveness of capital stock. With greater cash available for investment, firms may purchase new capital equipment, update technology, and increase production capacity[69]. Enhanced capital use efficiency may result in greater productivity and production levels, promoting financial development. Furthermore, a rise in financial debt might result in a higher national savings rate[69]. Individuals and corporations borrow money for investments and save some of their income to repay debts and create financial reserves. Increased

national savings may serve as a reliable reservoir of investment funds, stimulating more economic expansion.

The increase in money supply and its economic consequences are topics that should be carefully examined. Supporters of the quantity theory of money claim that the money supply is determined by external factors, the money supply has characteristics of both being determined internally and externally[103]. A connection where the money supply is influenced by changes in the real sector for short-term and cyclical variations[94]. He argues that in the long-term secular trend, changes in money supply are unrelated to the real sector and are driven outside. In the past few years, monetary economists have tried to determine the factors influencing the money supply. Some scholars think that the central bank controls the money supply, while others argue that it is an endogenous variable[101].

The components of the money supply, such as M1 and M2, along with their elements[35]. Concept is the conventional definition in many poor nations. Furthermore, the influence of money supply on an inflationary spiral has always been considered[35]. Inflation is caused by surplus demand and can be controlled by reducing the growth of money supply, which in turn decreases the growth of prices and wages through contractionary monetary policy measures[37]. Monetary authorities should refrain from using discretionary monetary policy and instead use monetary growth principles to address public uncertainty over potential inflationary monetary policies in the future.

The theory of eliminating money and monetary inflations is crucial for controlling inflation and sustaining financial development in a country. When there is a tendency towards capacity shortage, it leads to inflationary effects that must be addressed to achieve financial development[95]. The supply of money operates apart from the demand for money[35]. The emergence of hyperinflation. Wealth is the only characteristic that is likely to bring about major variations in velocity[92].

Demonstrate the correlation between money and economic progress, as shown by several studies in Nigeria[92,93].

Factors Influencing the Money Supply in Nigeria

The money supply in Nigeria seems to be primarily influenced by the behavior of two key economic components[104]. Firstly, it pertains to the banks' conduct about the level of reserves they choose to maintain at a given moment. This sum is determined by banks' ability to forecast and their understanding of the economic environment in which they operate, as they aim to optimize profits over time. Secondly, the conduct of the non-bank public in allocating their funds between currency and demand deposits impacts the monetary base or high-powered money. The greater the marginal currency deposits and subsequent money supply held by the non-bank public, the bigger the monetary base.

Monetary authorities use various devices to control the amount of high-powered money and oversee legal reserves, using direct and indirect methods[97]. Direct instruments include a range of techniques such as aggregate credit ceiling, exchange ceiling, deposits ceiling, special deposits or directives, and stabilization securities. These devices enable authorities to directly regulate the amount and distribution of credit in the economy. Aggregate credit ceilings restrict the overall credit issued by financial institutions, whereas stabilization securities help stabilize financial markets by modifying interest rates.

Indirect tools act discreetly by altering monetary circumstances via market processes. The tools mentioned include open market operations (OMO), cash reserve requirements (CRR), liquidity ratios (LR), minimum rediscount rates (MMR), parity changes (PC), selective credit controls (SCD), and moral suasion[105,106,107]. Open market operations include the purchase and sale of

government securities to regulate the money supply, while cash reserve requirements dictate that banking institutions maintain a certain percentage of their deposits as reserves. Liquidity ratios set standards for banks' liquidity levels, whereas minimum rediscount rates determine the interest rate at which central banks provide loans to commercial banks.

The distribution of bank loans to specific sectors, and the allocation of rural bank deposits as loans to rural borrowers. Essentially, these tools allowed governments to control monetary policy, oversee credit, and influence economic activity to align with larger economic goals and priorities. Extended use of direct instruments has various impacts on the economy and the efficacy of monetary policy in Nigeria[106]. Therefore, a decision was made to shift the monetary management technique to an indirect method using market-based instruments.

Control of Money Supply in Nigeria

Nigerian officials use a range of expansionary and contractionary strategies to efficiently control the money supply, aiming to create macroeconomic stability and promote sustainable financial development[92]. The measures are based on the monetary policy framework established by the Central Bank of Nigeria (CBN), which is pivotal in overseeing the nation's financial system and impacting economic circumstances. Expansionary policies attempt to increase the money supply in the economy to encourage economic activity and promote growth[105]. Government spending is a crucial element of expansionary initiatives. Government boosts the economy by investing in infrastructure, social programs, and public projects, which stimulates demand for products and services and promotes private sector investment. This rise in total demand leads to increased levels of economic production and employment.

The CBN also enforces regulations on commercial banks and promotes lending via initiatives[108]. The central bank may encourage banks to lend more to companies and consumers by decreasing reserve requirements or cutting interest rates. This increase in credit boosts investment, consumption, and total economic activity, hence enhancing financial development and development.

Contractionary policies attempt to decrease the money supply in the economy to manage inflation and avoid excessive financial development. One approach is decreasing government spending. The government may reduce inflationary pressures and promote price stability by decreasing public expenditure, which will lower the quantity of money circulating in the economy. The CBN can impose stricter controls on commercial banks to restrict their lending operations[108]. Options include strengthening reserve requirements, increasing interest rates, or enforcing tougher loan approval criteria. The central bank restricts credit availability to curb excessive financial development and avoid uncontrollable inflation[37].

Policymakers must carefully balance expansionary and contractionary actions to sustain ideal economic circumstances. An abundance of money in circulation may cause inflation, reducing the value of money and weakening consumer trust. On the other hand, too stringent monetary policies may hinder financial development, resulting in unemployment and stagnation. The CBN utilizes several monetary policy instruments including as open market operations, reserve requirements, and discount rate changes to control the money supply and meet its macroeconomic goals. The policies are adopted taking into account current economic circumstances, inflationary pressures, exchange rate movements, and other pertinent considerations[108]. The CBN aims to achieve sustained financial development, price stability, and financial stability in Nigeria via ongoing monitoring and adjustment of monetary policy measures.

Proactively controlling the money supply is essential for supporting the country's growth and increasing its ability to withstand external and internal obstacles.

2.1.2.4 Inflation

Inflation denotes the sustained and continuous increase in the general price levels of goods and services within an economy. This phenomenon is observed across various economies worldwide, albeit with differences in timing, causes, duration, and prevailing economic conditions. Inflation entails a persistent escalation in the overall price level, thereby impacting the value of the domestic currency[109]. It is not merely a one-time upward movement in prices but rather a sustained trend affecting all goods and services within the economy. Often characterized as a situation where "too much money is chasing too few goods," inflation erodes the purchasing power of currency, leading to a decline in its real value over time.

To illustrate, consider a scenario where N 10.00 can purchase 10 shirts in the current period. If the price of shirts doubles in the subsequent period, the same N 10.00 would only suffice to buy 5 shirts. This example underscores how inflation diminishes the purchasing power of currency, resulting in a reduced quantity of goods and services that can be obtained with a given amount of money. In essence, inflation entails a broad-based increase in prices across the entire spectrum of goods and services, rather than an isolated rise in the cost of specific commodities or commodity groups[13].

Therefore, in defining inflation, two key aspects must be emphasized. Firstly, inflation is aggregate in nature, implying that the price rise must encompass the entirety of the goods basket within the economy[13]. This contrasts with situations involving isolated price hikes for individual commodities or groups of commodities. Secondly, inflation manifests as a sustained phenomenon, persisting

over time to exert a pervasive impact on the economy's price structure. By understanding these fundamental characteristics of inflation, policymakers and economists can formulate effective strategies to mitigate its adverse effects and maintain price stability within the economy.

It's worth noting that economies, whether developed, developing, or underdeveloped, commonly experience fluctuations in prices. While some economies may witness only minor fluctuations, others face consistent and prolonged increases in prices. It is refers to a sustained general increase in the price level within an economy. This entails a persistent rise in the prices of goods and services, resulting in a decline in the purchasing power of the currency. Despite being a familiar concept in many market-oriented economies, the intricacies of inflation, including its determinants, mechanisms, and real impact on national financial development, remain elusive to many. High inflation poses detrimental effects on economic performance, yet zero inflation is equally harmful as it can lead to economic stagnation. Mild inflation, however, is deemed necessary for fostering financial development. The challenge of inflation transcends national borders and affects both emerging and developed market economies[14]. Over the years, policymakers worldwide have prioritized controlling inflation as an essential economic goal.

Spikes in inflation rates often lead to significant economic disruptions, encompassing balance of payment deficits, currency devaluation, and a decrease in the purchasing power of the working class[14]. Consequently, labor unions frequently advocate for higher wages to counteract the erosion of their purchasing power. The frequent strikes by Nigerian workers have detrimental effects on the economy, resulting in decreased productivity and paralyzed services, particularly in critical sectors like education and healthcare. The persistent disruption of services in these sectors impedes the development of human capital, ultimately hindering the country's economic advancement.

It's important to note that changes in individual prices, or combinations thereof, do not necessarily signify inflation. However, situations may arise where a change in one price could trigger a ripple effect, causing other prices to increase[14]. For instance, adjustments in petroleum product prices in Nigeria may impact other prices in the economy. Yet, this alone does not indicate inflation unless the price adjustments across the board lead to a general rise in the aggregate price level. Additionally, for inflation to be deemed to have occurred, the increase in the aggregate price level must be continuous and sustained over various time periods.

Several factors contribute to inflation in Nigeria. Demand-pull inflation stems from excess aggregate demand, while cost-push inflation results from rising production costs. Structural inflation arises from constraints such as inefficient production, marketing, and distribution systems in key sectors of the economy[13]. Other forms of inflation prevalent in developing countries include imported, open, and seasonal inflation. Imported inflation occurs when inflation is transmitted through internationally traded goods and services, particularly when Nigeria imports goods from countries experiencing inflation. Open inflation arises from uninterrupted market mechanisms, while seasonal inflation is associated with production cycles, such as declines in farming output. In Nigeria, additional factors influencing inflation include the nature of the economy, its historical context, and the direction of fiscal and monetary policies.

2.1.3 Corruption

Corruption manifests as a multifaceted and intricate phenomenon, influenced by numerous factors and resulting in diverse consequences. Its manifestations vary widely, encompassing broad concepts such as the misuse of public power and moral decay, as well as more narrowly defined instances, like bribery involving public officials and the illicit transfer of tangible resources[108]. In

essence, corruption can be distilled into the abuse of entrusted power or public office for personal gain[108].

Corruption is a pervasive global challenge, sparing no nation from its detrimental influence[109]. It is recognized as a systemic issue spanning political, economic, cultural, and individual realms, impacting numerous countries worldwide, particularly those in the developing world[108]. Its presence transcends political systems and cultural contexts, afflicting democratic and dictatorial societies alike, as well as economies of varying ideologies[110]. Corruption infiltrates both public and private sectors, spanning profit-driven enterprises, nonprofit organizations, and charitable institutions. While prevalent in both developing and developed nations, it is notably more pronounced in developing countries, often indicative of systemic dysfunction[108]. In Nigeria, corruption is an enduring topic of discourse and a significant barrier to business operations, with companies frequently encountering bribery and other corrupt practices.

Corruption exerts a profound impact on financial development, with ramifications extending to various facets of society[109]. Beyond impeding economic efficiency and growth, corruption disrupts the equitable distribution of resources, exacerbating income inequalities and undermining the effectiveness of social welfare programs. This skewed income distribution further dampens effective demand in the economy, resulting in reduced levels of investment, trade flows, and government effectiveness, ultimately stunting human development and sustainable growth prospects[108]. The direct impact of corruption on financial development and development is well-documented, influencing factors such as investment, taxation, and public expenditure effectiveness[108]. Additionally, scholars have identified numerous channels through which corruption hampers financial development[109,110]. These include the distortion of incentives and market forces, diversion of talent and resources towards rent-seeking activities, and imposition of

an inefficient tax burden on businesses. Furthermore, corruption diminishes the productivity of investments by compromising resource quality and fuels inefficiencies, leading to the wastage of resources and undermining the efficiency of public expenditure[108].

Corruption permeates societies worldwide, inflicting immeasurable harm on economies. Its impact reverberates across economic, political, and social domains, whether through direct consequences or indirect repercussions. While the immediate costs of corruption, such as lost revenue and diverted funds, are significant, the enduring effects manifest in economic distortions, inefficiencies, and waste pose greater challenges in the long run. These indirect costs exacerbate the complexity of addressing corruption, compounding its detrimental effects over time[110].

The repercussions of corrupt practices on Nigeria's financial development are grave and pervasive, threatening the stability of the entire economic system. Numerous studies have underscored the negative impact of corruption on financial development[35,39,109]. Corruption's magnitude and effects are particularly severe in Nigeria, hindering the pace of economic progress as argued that government efforts to combat corruption are futile due to its widespread prevalence, infecting both the government and society at large[39,108].

Conversely, some scholars posit that corruption can grease the wheels of financial development, adding to the controversy surrounding its impact[111,112]. However, given the high incidence of corrupt practices in Nigeria and the stagnant financial development, empirical verification of the relationship between corruption and financial development is imperative.

Despite possessing significant oil reserves and abundant resources, Nigeria continues to grapple with poverty, underdevelopment, and unstable financial development. Various development indicators reflect this stagnation, with persistent economic challenges such as poverty,

unemployment, insecurity, and widening inequality gaps. This fragile state underscores the urgency of robust empirical research to comprehensively assess the relationship between corruption and financial development, as existing evidence fails to provide conclusive insights.

Corruption has plagued economies for centuries, exerting a profound and detrimental impact on financial development. This inverse relationship between corruption and economic prosperity has stirred both concern and despair among the populace. Corruption facilitates the diversion of limited public funds, stymies economic progress, and obstructs policy reforms crucial for development. Consequently, it not only impedes growth but also corrodes established economic value systems in Nigeria. The devastating consequences of persistent corruption have reached alarming levels, despite numerous unsuccessful attempts to curb the menace. Corruption has permeated African society to such an extent that denying its severity is either naive, dishonest, or indicative of detachment from reality[113,114].

Despite ongoing efforts to combat corruption, the elusive nature of a perfect solution, given the failures of previous endeavors[110,115]. Corruption persists as a recurrent challenge, thwarting growth with no clear resolution in sight. The omnipresence of corruption in academic and formal discourse in Nigeria, reflecting its pervasive threat to meaningful development. Moreover, the ineffectiveness of cleanup programs targeting corruption in Africa, further emphasizing the entrenched nature of the phenomenon[116,117]

2.2 Theoretical Framework

2.2.1 Theory of Monetary Policy Transmission Mechanisms

Conventional examinations of monetary policy's influence on the real economy have predominantly centred on its overall effects. Since the pioneering work of Friedman and Schwartz in 1963, contemporary empirical studies in monetary economics have highlighted the role of

policy in stabilizing the macroeconomy[118]. However, anecdotal evidence indicates that business cycles also carry implications for income distribution. An avenue for framing the discourse on the relative significance of diverse channels of monetary policy transmission is to inquire whether these distributional effects merit close scrutiny.

The concept of the Monetary Policy Transmission Mechanism has evolved over time and does not have a single founder. However, its development can be traced back to the work of several prominent economists throughout history[118]. Key figures include Irving Fisher, John Maynard Keynes, Milton Friedman, and others. Fisher's work on the Quantity Theory of Money in the early 20th century laid the groundwork for understanding the relationship between money supply and prices[117]. Keynes introduced the interest rate channel, emphasizing the role of aggregate demand in determining economic activity[119]. Friedman's Monetarist views highlighted the importance of money supply growth in influencing inflation rates, while others like Tobin and Bernanke contributed insights into the portfolio balance channel and credit channel, respectively.

The Monetary Policy Transmission Mechanism serves as the intricate web through which shifts in monetary policy variables, such as interest rates, exchange rates, and money supply, cascade through the economy, sculpting outcomes like output, employment, and inflation[119]. It's akin to a complex network of pathways, illuminating how decisions made by central banks reverberate and ripple across the broader economic landscape.

Delving into the heart of this mechanism unveils a fascinating puzzle: How do seemingly minor tweaks in the availability of an external asset trigger monumental transformations in the overall composition of assets in zero net supply? How do even subtle adjustments in the monetary base or nonborrowed reserves set off significant waves, reshaping demand deposits, loans, bonds, and other securities, thereby moulding the trajectory of aggregate investment and output?

One enlightening framework to explore these mysteries traces back to the groundbreaking work of Brainard and Tobin in 1963[120]. Their paradigm emphasizes the intricate dance between monetary policy decisions and investor portfolios, offering a window into the profound impacts felt throughout the financial landscape. Adding depth to this understanding are the seminal insights from Fama's 1980 paper on the dynamic interplay between financial intermediaries and central banks[121]. Fama's vision of financial intermediaries represents the cutting edge of financial innovation, envisioning a landscape where traditional banks gradually evolve into something new[120]. At its core lies the investor's conundrum: How to navigate the seas of asset allocation given their real wealth. By assigning portfolio weights to each asset, denoted as wi, and considering total wealth as W, the demand for each asset—Xi—becomes a dynamic expression of this delicate balancing act: Xi = wiW. In the current economic landscape, the focus often turns to the monetary base. Extensive literature examines how the demand for outside money emerges organically within this environment, as described above. Additionally, as highlighted by Fama, legal requirements can also compel agents to utilize this specific asset for certain transactions, such as reserve requirements and its use in bank clearings.

In this stylized framework, a policy action constitutes a shift in the nominal supply of this outside money[119]. For such a change to yield any effects, nominal rigidities must exist. Without these rigidities, alterations in the nominal quantity of outside money would fail to impact the real interest rate and consequently have no real effects. However, assuming the policymaker can alter the real return on the monopolistically supplied asset, investors' portfolio allocations must adapt accordingly in response to policy shifts.

Several key characteristics define this idealized world. Firstly, it's crucial to note that for policy to exert influence, two conditions must be met: the central bank must control the supply of a sought-

after asset with no perfect substitutes, and prices must fail to adjust fully and instantaneously[117]. This depiction of financial intermediaries underscores the insight that monetary policy can be comprehended by focusing solely on the endogenous adjustments of investor portfolios[118]. Understanding the transmission mechanism necessitates understanding how asset holdings evolve in reaction to policy actions.

Secondly, while traditional banks may not exist in this scenario, there will undoubtedly be intermediaries facilitating small business loans. Despite the absence of bank deposits as liabilities, these entities likely acting as brokers will bundle and securitize loans. With this context in mind, we can outline the two major views of the monetary transmission mechanism[118,121]. Consequently, The ongoing discourse surrounding the monetary transmission mechanism mirrors a similar debate. According to the conventional IS-LM framework, changes in policy are significant only in their aggregate effects[122]. Under this view, the focus lies primarily on fluctuations in total investment, as policies primarily influence the required rate of return on new investment ventures. Consequently, it's typically the least profitable projects on a macroeconomic scale that face funding challenges due to policy-induced interest rate increases. However, since the most lucrative projects persist, there are typically no direct efficiency losses associated with the distributional ramifications of policy-induced interest rate adjustments.

In contrast, the "lending" perspective zooms in on the distributional repercussions of monetary policy actions. This alternative theory underscores a combination of imperfections in capital markets and portfolio balance effects resulting from imperfect substitutability of assets[121]. Here, the theory suggests that the impact of policy may vary significantly across agents within the economy. Moreover, policy's influence extends beyond the inherent creditworthiness of investment projects and may relate to individual characteristics unrelated to project viability. For instance, an

entrepreneur may find themselves deemed unworthy of credit solely due to their current low net worth, regardless of the project's potential social return. Understanding whether shifts in investment prompted by monetary policy changes yield such repercussions is of paramount importance.

It's logical to assert that before delving into the study of the monetary transmission mechanism, it's imperative to pinpoint monetary shocks. Several scholars have compellingly argued that policy disruptions cannot be accurately assessed solely by analyzing fluctuations in monetary aggregates. This limitation stems from the fact that the variance in innovations to broad measures of money reflects a combination of endogenous responses to real shocks and shifts in money demand[118,119].

In response to the inadequacy of monetary aggregates in elucidating policy actions, two approaches have emerged. Firstly, attention has turned to the operational procedures of the Federal Reserve and how policy is practically formulated[119,120]. The federal funds rate as the actual policy instrument employed on a day-to-day basis, suggesting that innovations to this rate likely mirror, at least partially, policy disturbances. Their conclusion is grounded in a thorough examination of the institutional framework governing monetary policy implementation.

Secondly, an alternative method, which advocate for scrutinizing the minutes of the Federal Open Market Committee (FOMC) meetings to discern policy stances[123]. By analyzing these minutes, they construct a series of dates indicating when policy shifts towards contractionary measures were believed to occur. This method offers another avenue for understanding the dynamics of monetary policy formulation and its impact on the economy.

Critics of the Monetary Policy Transmission Mechanism raise valid concerns regarding its effectiveness, pointing out several factors that can potentially limit its impact. One such factor is

the presence of lags in policy implementation. Monetary policy decisions made by central banks may take time to be fully implemented and have their desired effects on the economy[118]. This delay can diminish the efficacy of the policy response, especially in addressing immediate economic challenges.

Furthermore, uncertainty about the future can undermine the transmission mechanism. Economic agents, including consumers, businesses, and investors, may exhibit cautious behavior in response to uncertain economic conditions[118]. This hesitancy can dampen the potency of monetary policy actions, as individuals and firms may delay spending or investment decisions until there is greater clarity about the economic outlook. Changes in financial market conditions also pose challenges to the effectiveness of the transmission mechanism. Financial markets are dynamic and can be influenced by a multitude of factors, including global economic trends, geopolitical events, and shifts in investor sentiment. These fluctuations can complicate the transmission of monetary policy signals, potentially leading to unintended consequences or muted responses from market participants.

Moreover, critics question the underlying assumptions of rationality and perfect information that underpin the Monetary Policy Transmission Mechanism. In reality, individual and market behavior may deviate from the predictions of economic models based on these assumptions[118]. Behavioral biases, imperfect information, and herd mentality can all lead to irrational decision-making by economic agents, affecting the transmission of monetary policy signals and outcomes. Critics highlight various challenges and limitations that can impede the effectiveness of the Monetary Policy Transmission Mechanism[118]. Addressing these concerns requires careful consideration of the complexities of real-world economic dynamics and the adoption of flexible and adaptive policy approaches by central banks.

Despite facing criticisms, the Monetary Policy Transmission Mechanism remains a valuable framework for understanding the intricate interplay between changes in monetary policy variables and their effects on the broader economy[118]. By illuminating the channels through which monetary policy actions propagate through the economy, this framework equips policymakers with valuable insights to make informed decisions aimed at achieving their macroeconomic objectives.

One of the key strengths of the Monetary Policy Transmission Mechanism is its ability to provide policymakers with a roadmap for navigating the complexities of the economy[118]. By identifying the specific channels through which monetary policy actions exert their influence, policymakers can tailor their policy interventions to target specific economic outcomes, such as price stability, full employment, and sustainable financial development[119]. This targeted approach allows policymakers to deploy monetary policy tools more effectively, maximizing their impact on the economy.

Furthermore, the Monetary Policy Transmission Mechanism serves as a vital tool for empirical testing and analysis. Researchers can use this framework to develop econometric models and conduct empirical studies to evaluate the effectiveness of different monetary policy tools and strategies[118,120]. By examining historical data and real-world outcomes, researchers can assess the efficacy of monetary policy interventions in achieving desired economic objectives. This empirical evidence not only informs current policymaking decisions but also contributes to the ongoing refinement and evolution of monetary policy frameworks.

In essence, despite its limitations and criticisms, the Monetary Policy Transmission Mechanism remains a cornerstone of modern macroeconomic analysis and policymaking[118]. Its ability to elucidate the complex dynamics of monetary policy transmission empowers policymakers to make more informed decisions, while also providing researchers with a valuable tool for empirical

testing and analysis. As policymakers continue to grapple with the challenges of managing complex and dynamic economies, the Monetary Policy Transmission Mechanism will undoubtedly remain a central component of their toolkit.

The application of the Theory of Monetary Policy Transmission Mechanisms to the study of "Monetary Policy and Financial Development in Nigeria" provides a robust theoretical framework to understand how monetary policy influences economic variables and contributes to financial development within the Nigerian context[118].

The Theory of Monetary Policy Transmission Mechanisms explains how changes in the central bank's monetary policy instruments, such as interest rates, reserve requirements, and open market operations, affect the economy[118]. The primary channels through which monetary policy impacts the economy include the interest rate channel, the credit channel, the exchange rate channel, the asset price channel, and the expectations channel[119,120]. These channels are interlinked, creating a comprehensive pathway through which monetary policy decisions filter down to the broader economy.

In Nigeria, an emerging market with its unique economic landscape, these transmission mechanisms operate in specific and often complex ways[118]. The interest rate channel can be assessed by examining how changes in the Central Bank of Nigeria's (CBN) policy rate influence commercial bank interest rates, consumer spending, and business investment. Given Nigeria's relatively underdeveloped financial markets, the impact of interest rate changes might differ from more advanced economies, making it crucial to understand the effectiveness of traditional monetary policy tools in Nigeria.

The credit channel in Nigeria can be investigated by looking into how monetary policy affects credit availability and lending behavior in Nigerian banks. In a country where access to credit is often constrained, understanding the influence of policy changes on bank lending can provide insights into improving financial inclusion and financial development. The exchange rate channel is also critical, especially for an import-dependent economy like Nigeria. By analyzing the impact of monetary policy on the Nigerian Naira's exchange rate and the subsequent effects on trade and inflation, we can better understand how monetary policy can stabilize prices and influence economic activity.

Exploring the asset price channel involves studying how monetary policy influences the Nigerian stock market and real estate prices. As asset markets in Nigeria continue to grow, their reaction to monetary policy can offer insights into wealth effects and investment behavior. Additionally, the expectations channel requires examining how CBN's policy announcements and forward guidance affect business and consumer expectations. In an economy with information asymmetry and market inefficiencies, managing expectations through credible policy communication can enhance the effectiveness of monetary policy.

Linking this theory to financial development involves examining how effective monetary policy transmission can support the growth and stability of Nigeria’s financial system. This includes assessing financial deepening, where improved monetary policy transmission enhances financial intermediation, savings, and investment. Financial inclusion can be explored by understanding how monetary policy can broaden access to financial services for underbanked populations. Furthermore, investigating the role of monetary policy in fostering capital market development, increasing liquidity, and improving market infrastructure can provide insights into market development.

Anchoring the study on the Theory of Monetary Policy Transmission Mechanisms is justified for several compelling reasons, especially within the context of examining monetary policy and financial development in Nigeria.

The Theory of Monetary Policy Transmission Mechanisms provides a comprehensive framework for understanding the multifaceted effects of monetary policy on the economy[118,119]. By focusing on how changes in policy instruments such as interest rates, reserve requirements, and open market operations influence economic variables, this theory allows for a detailed analysis of the pathways through which monetary policy impacts financial development. In Nigeria, where economic structures and market dynamics differ significantly from those in more developed economies, a nuanced understanding of these transmission mechanisms is essential.

Nigeria's economic landscape, characterized by its emerging market status, requires a theoretical framework that can accommodate its unique features. The Theory of Monetary Policy Transmission Mechanisms is particularly relevant as it considers various channels—interest rate, credit, exchange rate, asset price, and expectations—that are crucial in an economy with diverse financial challenges and opportunities[119,120]. This relevance ensures that the study remains grounded in the actual economic realities of Nigeria, providing insights that are directly applicable to policy-making.

Financial development is a critical area of focus for Nigeria, given the need to enhance financial inclusion, deepen financial markets, and foster financial development. The chosen theory explicitly addresses how monetary policy can influence these aspects through different transmission channels. For instance, understanding how the interest rate channel affects consumer and business spending can help design policies that stimulate investment and consumption. Similarly, exploring the credit

channel can provide strategies to improve credit availability, which is vital for financial inclusion and economic activity.

The theory's framework allows for empirical validation using Nigerian data, making it possible to test and quantify the effects of monetary policy on various economic and financial variables. By employing econometric models and analyzing specific policy episodes, the study can provide robust evidence on the effectiveness of different transmission mechanisms in Nigeria[118,119]. This empirical approach not only strengthens the theoretical foundation of the study but also ensures that the findings have practical applications for policymakers.

One of the key justifications for anchoring the study on this theory is its potential to enhance the effectiveness of monetary policy in Nigeria. By providing a detailed understanding of how policy changes propagate through the economy, the study can offer valuable recommendations for the Central Bank of Nigeria (CBN) and other policymakers[119]. This can lead to more targeted and efficient policy interventions that support financial development, economic stability, and growth.

Finally, the Theory of Monetary Policy Transmission Mechanisms is adaptable to evolving market conditions, which is crucial for an emerging economy like Nigeria[118]. As the financial markets develop and new economic challenges arise, the theory provides a flexible framework that can incorporate these changes. This adaptability ensures that the study remains relevant and can continue to provide valuable insights over time.

Anchoring the study on the Theory of Monetary Policy Transmission Mechanisms is justified by its comprehensive nature, relevance to Nigeria's economic context, focus on financial development, empirical validation potential, enhancement of policy effectiveness, and adaptability to evolving conditions[118]. These factors collectively ensure that the study provides a thorough and applicable

analysis of how monetary policy can foster financial development in Nigeria. Thus, this study hinges on the theory of the Monetary Policy Transmission Mechanism as the overarching framework for capturing most of the indices and metrics utilized[118].

2.2.2 New Keynesian Theory

The New Keynesian theory, founded in the late 20th century, is an extension of traditional Keynesian economics and neoclassical economic theory[124]. It emphasizes the role of market imperfections and nominal rigidities in shaping economic outcomes, particularly in the short run.

The concept of New Keynesian theory revolves around the idea that prices and wages are sticky in the short run, meaning they do not adjust immediately to changes in demand or supply[124]. This leads to market inefficiencies and the potential for unemployment and output gaps. New Keynesian economists argue that these nominal rigidities create a role for government intervention, particularly through monetary policy, to stabilize the economy and address market failures.

The Keynesian and Neo-Keynesian theories offer a robust framework for understanding the interplay between inflation and financial development within the aggregate supply-aggregate demand (AS-AD) framework[124]. This model posits a positive relationship between inflation and growth, suggesting that as financial development accelerates, inflation tends to rise as well. Central to the AS-AD framework is the upward sloping nature of the aggregate supply (AS) curve in the short run, contrasting with its vertical orientation in the long run. This distinction is crucial as it signifies how changes in aggregate demand (AD) impact both prices and output. In the short run, shifts in AD can influence both price levels and overall output, reflecting the responsiveness of producers to changes in demand conditions.

A multitude of factors contribute to fluctuations in inflation and output in the short run, including shifts in expectations, changes in the labor force, alterations in the prices of other factors of production, and adjustments in fiscal and monetary policies[125]. These factors interact dynamically, shaping the dynamics of inflation and output levels over time. Transitioning from the short run to the long run involves a process where the aforementioned factors and their impacts on the economy's "steady state" gradually balance out. While producers may initially perceive price increases as isolated to their products, overall prices in the economy rise over time. However, producers respond by increasing output to meet growing demand, contributing to sustained financial development.

The potential positive impact of inflation on financial development[124]. They highlight scenarios where inflation may lead to agreements between firms and consumers, wherein goods are supplied at pre-agreed prices at a later date. This arrangement ensures that even amid rising prices, output does not decline, as producers fulfill previously established agreements with consumers, thereby supporting continued economic activity and growth.

Critics of New Keynesian theory often highlight its reliance on assumptions of imperfect competition and rigid prices, which they argue may not accurately depict real-world market conditions[125]. The assumption of imperfect competition implies that firms have some degree of market power, which can lead to inefficiencies in resource allocation and potentially distortions in pricing. Similarly, the assumption of rigid prices suggests that prices do not adjust instantaneously in response to changes in supply and demand, leading to potential mismatches between market conditions and price levels.

Furthermore, some economists argue that New Keynesian models may oversimplify the complexities of modern economies. These models typically focus on a limited set of factors, such

as price stickiness and aggregate demand shocks, while neglecting other important determinants of economic behavior, such as expectations, financial market dynamics, and institutional factors. Critics contend that this simplification may limit the explanatory power of New Keynesian models and their ability to accurately capture the dynamics of real-world economic systems[124].

Despite these criticisms, New Keynesian theory offers several benefits. One of its key contributions is providing a framework for understanding the role of nominal rigidities in shaping economic fluctuations[125]. By emphasizing the importance of sticky prices and wages, New Keynesian models offer insights into how changes in monetary policy can affect output, employment, and inflation dynamics in the short run. This framework has been instrumental in informing policy decisions aimed at stabilizing the economy during periods of volatility, such as recessions or financial crises.

Moreover, New Keynesian models have been widely used in academic research and policymaking, contributing to our understanding of macroeconomic dynamics[125]. The rigorous theoretical foundation of New Keynesian theory, combined with its empirical relevance, has made it a valuable tool for analyzing and interpreting real-world economic data. By providing policymakers with insights into the effects of monetary policy interventions, New Keynesian models have helped guide policy responses to economic challenges and promote macroeconomic stability[124]. While New Keynesian theory is not without its criticisms, its benefits outweigh its drawbacks. By offering a coherent framework for understanding the impact of nominal rigidities on economic fluctuations, New Keynesian theory has advanced our understanding of macroeconomic dynamics and informed policy responses to economic shocks.

In the context of studying monetary policy measures and economic development in Nigeria, the application of New Keynesian theory provides a valuable framework for understanding the

dynamics of monetary policy transmission and its impact on key economic outcomes. New Keynesian theory offers insights into how changes in monetary policy variables, such as interest rates and money supply, influence economic outcomes in the short run[125]. By incorporating New Keynesian models into the analysis, researchers can delve into how nominal rigidities, such as sticky prices and wages, affect the transmission of monetary policy in the Nigerian economy.

Specifically, researchers can examine how adjustments in interest rates by the Central Bank of Nigeria (CBN) influence borrowing costs, investment decisions, and consumer spending[126]. Additionally, they can explore how changes in the money supply affect liquidity conditions, lending activities, and overall economic activity. Through this framework, the analysis of short-run dynamics of inflation, output, and employment in response to monetary policy interventions. This identify how nominal rigidities amplify or dampen the effects of monetary policy on these key economic indicators[125].

Gaining a nuanced understanding of the monetary policy transmission mechanism within the context of New Keynesian theory, policymakers in Nigeria can formulate more effective policy responses to economic challenges. Analysis form this insight to fine-tune monetary policy measures and mitigate the impact of economic fluctuations on inflation, output, and employment. The application of New Keynesian Theory to the study of monetary policy and financial development in Nigeria offers a robust and modern economic framework for understanding the interplay between policy interventions and financial growth[124,125]. The New Keynesian framework, characterized by price stickiness, imperfect competition, and rational expectations, provides nuanced insights into how monetary policy can influence financial development and overall economic performance in an emerging market context like Nigeria.

In the Nigerian context, price and wage stickiness can have significant implications for monetary policy effectiveness. The Central Bank of Nigeria (CBN) must consider how slow adjustments in prices and wages affect the transmission of policy changes to the real economy. For example, if wages are slow to adjust, a reduction in interest rates may not immediately translate into increased spending and investment. This lag can be particularly pronounced in Nigeria due to structural rigidities in labor and product markets.

Nigeria's markets often exhibit imperfect competition, with significant market power concentrated in certain sectors. This market structure affects how monetary policy influences prices and output. By recognizing the role of imperfect competition, the CBN can tailor its policies to address specific sectoral issues, such as encouraging competition and reducing monopolistic practices that hinder financial development.

Economic agents in Nigeria, including businesses and consumers, form expectations about future inflation, interest rates, and economic conditions. These expectations play a crucial role in shaping their spending and investment decisions. The CBN's credibility and communication strategy are vital in managing these expectations. By committing to a transparent and predictable monetary policy framework, the CBN can anchor expectations and enhance the effectiveness of its policy interventions.

The application of policy rules, like the Taylor Rule, can provide a systematic approach to monetary policy in Nigeria. By adjusting interest rates based on deviations from target inflation and output levels, the CBN can achieve greater stability and predictability in the economy. This rule-based approach helps in mitigating discretionary risks and promotes a stable financial environment conducive to growth[126].

New Keynesian Theory suggests that effective monetary policy can stimulate financial deepening by encouraging savings and investment[124,126]. By maintaining low and stable inflation, the CBN can foster an environment where financial institutions can thrive, offering diverse financial products that cater to different segments of the population. This deepening of financial markets enhances the allocation of resources, leading to more productive investments and financial development.

A key aspect of financial development is financial inclusion—ensuring that all segments of the population have access to financial services[124]. Monetary policy, guided by New Keynesian principles, can support financial inclusion by creating a stable macroeconomic environment[125]. Low inflation and stable interest rates reduce the cost of borrowing, making financial services more accessible to low-income households and small businesses.

The development of capital markets is essential for financial development in Nigeria. By implementing predictable and stable monetary policies, the CBN can reduce uncertainties and risks associated with long-term investments. This stability attracts both domestic and international investors, fostering the growth of Nigeria's capital markets and enhancing their role in financing economic development[126].

2.2.3 Financial Intermediation Theory

Financial Intermediation Theory provides a foundational framework for understanding the role of financial institutions, such as banks and other intermediaries, in channeling funds from savers to borrowers[127]. This theory is pivotal in modern economic and financial analysis, as it addresses how intermediaries mitigate informational asymmetries, reduce transaction costs, and support efficient capital allocation. In the context of your research on monetary policy, corruption, and financial

development in Nigeria, this theory serves as a valuable lens through which the role of intermediaries in the financial system can be examined.

The concept of financial intermediation has evolved over time, originating in the early theories of capital markets. Classic economists like Adam Smith and John Stuart Mill discussed the importance of efficient allocation of resources but did not focus specifically on financial intermediaries[127]. The formalization of financial intermediation theory emerged in the 20th century, particularly with the role of financial intermediaries in economic development[127].

Later, the theories advanced by Diamond and Dybvig in 1983 provided a more structured approach by examining how intermediaries mitigate risks associated with liquidity, leading to greater stability in the financial system[127,128]. The role of intermediaries as delegated monitors, emphasizing their function in reducing costs associated with information asymmetries in lending. These foundational works paved the way for modern financial intermediation theory, which examines the critical functions of these institutions within complex economic systems[128].

Financial intermediaries perform several key functions that contribute to financial development:

Liquidity Transformation: Intermediaries pool funds from savers, enabling them to offer liquidity to depositors while simultaneously providing long-term loans to borrowers. This liquidity transformation is essential for economic growth, as it allows businesses to access capital for investment without the need for savers to forego liquidity.

Risk Mitigation and Diversification: Intermediaries reduce individual risk through diversified investment portfolios. By pooling resources, they are able to spread risk across a variety of assets, lowering the potential impact of any single loss. Reducing Information Asymmetry: One of the main contributions of financial intermediaries is their role in addressing information asymmetries between savers and borrowers. Intermediaries act as “delegated monitors”, gathering and assessing

information on potential borrowers, thereby reducing the risk of adverse selection and moral hazard in lending[128]. Transaction Cost Reduction: By aggregating individual savings and facilitating lending processes, financial intermediaries lower transaction costs. This efficiency supports broader access to credit, contributing to the overall development of the financial sector.

Financial intermediation theory posits that intermediaries are essential for the efficient allocation of resources, which is central to economic development. Studies have shown that countries with well-developed financial systems experience faster economic growth[129]. Providing capital to productive sectors, financial intermediaries facilitate investment, encourage innovation, and support employment.

In emerging economies like Nigeria, financial intermediaries play an even more critical role due to limited access to formal financing and higher levels of financial exclusion. Effective intermediation enhances financial depth and broadens access to financial services, which is crucial for sustainable economic development[129]. However, weaknesses in the financial intermediation process, often exacerbated by institutional inefficiencies and corruption, can hinder the potential of these benefits.

Monetary policy significantly influences the activities of financial intermediaries, particularly through interest rates and the money supply. For instance, an increase in the money supply can lower interest rates, making borrowing more attractive. This relationship is fundamental to financial intermediation theory, as it underscores the responsiveness of intermediaries to monetary policy adjustments.

Monetary policy decisions affect banks' lending capacity and their ability to offer competitive interest rates on loans and deposits. In Nigeria, central bank policies, including adjustments to the policy rate and reserve requirements, directly impact the activities of intermediaries. These

changes can either stimulate or stifle financial intermediation, depending on the policy direction, ultimately influencing financial development indicators like financial depth and access.

Institutional quality plays a crucial role in the effectiveness of financial intermediation. In economies with high levels of corruption, the efficiency of intermediaries is often compromised. Corruption can create entry barriers, impose additional costs on transactions, and discourage foreign investment. It also erodes trust in financial institutions, which is critical for attracting deposits and facilitating credit access[130].

In Nigeria, corruption can distort the role of intermediaries by channeling funds towards unproductive sectors or high-risk ventures favored by political influence. Furthermore, corrupt practices may reduce the effectiveness of monetary policy, as intermediaries may face inefficiencies and are forced to implement practices that increase costs for end users, reducing the inclusivity and stability of financial systems.

While financial intermediation theory highlights the positive contributions of intermediaries, it has limitations and has faced criticism:

Failure to Address Systemic Risks: The global financial crisis of 2007–2008 revealed that financial intermediaries could also contribute to systemic risks, undermining financial stability. Excessive risk-taking by banks led to failures, showing that financial intermediation does not always result in optimal outcomes.

Regulatory and Institutional Constraints: In developing economies, regulatory frameworks may be inadequate, making it challenging for intermediaries to function efficiently. In Nigeria, for instance, limited institutional support and high levels of informality in the economy hinder the potential benefits of intermediation.

Digital Finance and Disintermediation: Recent advancements in fintech and digital finance have challenged the traditional model of financial intermediation. Peer-to-peer lending platforms, digital payment systems, and cryptocurrency markets bypass traditional intermediaries, raising questions about the future relevance of conventional intermediation models.

In examining the impact of monetary policy and corruption on financial development in Nigeria, financial intermediation theory is highly relevant. The theory provides a basis for understanding how intermediaries facilitate the flow of capital and how they are influenced by monetary policy adjustments. It also underscores the potential for corruption to distort these processes, affecting financial depth, access, and stability[130].

This study uses financial intermediation theory to investigate how the central bank's monetary policies shape the Nigerian financial sector and how corruption might undermine the sector's ability to effectively serve the economy. By integrating insights from financial intermediation theory, the research addresses critical questions about the role of policy in promoting or inhibiting financial development within a challenging institutional environment.

Financial intermediation theory offers a comprehensive framework for understanding the role of financial institutions in promoting economic growth and development. Its focus on liquidity transformation, risk mitigation, and informational efficiency highlights the importance of intermediaries within any financial system. However, the theory also reveals challenges when applied to contexts with significant corruption and institutional inefficiencies, as seen in Nigeria. By applying this theory, this study will deepen the understanding of how monetary policy and corruption impact financial development, offering insights into strategies for enhancing Nigeria's financial sector performance.

2.2.4 Institutional Theory

Institutional theory offers a profound perspective on the relationship between institutions and economic development, focusing on the role that formal and informal structures play in shaping organizational behavior and economic outcomes. Rooted in economics and sociology, institutional theory emphasizes that institutions comprising laws, norms, regulations, and social practices—are essential for facilitating or hindering economic development[131]. This framework is particularly useful in examining the impacts of governance, corruption, and regulatory frameworks on financial systems. For the purpose of this study, institutional theory provides a lens to explore how corruption and institutional quality affect the efficiency of financial intermediation and the development of financial systems in Nigeria.

Institutional theory has its origins in the works of early economists such as Thorstein Veblen in 1899 and John R. Commons in 1934, who examined the role of institutions in economic behavior. Veblen's idea of "institutional economics" emphasized the ways in which social institutions influenced the decision-making of economic agents, while Commons' work focused on how economic transactions were governed by legal and institutional frameworks[131].

However, the more formal development of institutional theory can be credited to Douglass North in 1990, who highlighted the central role of institutions in economic development[131]. North argued that the efficiency of economic systems depends on the strength and functionality of institutions, which reduce transaction costs, establish property rights, and regulate economic activities. North's work on institutional change and economic performance emphasizes the need for effective institutional arrangements to foster economic growth and development.

Further institutional theory was refined by exploring how organizations within a given institutional context tend to conform to prevailing norms and practices to gain legitimacy a concept known as institutional isomorphism[132]. This perspective helps explain how financial institutions, for example,

may adopt policies or practices to align with established norms, even in environments where corruption or inefficiency is prevalent. These foundational works set the stage for applying institutional theory to the analysis of financial development in economies with weak institutional frameworks, such as Nigeria.

Institutional theory revolves around several key concepts that elucidate the role of institutions in shaping economic outcomes:

Formal and Informal Institutions: Formal institutions refer to the legal frameworks, regulations, and rules enacted by governments and official entities, while informal institutions consist of social norms, cultural practices, and unwritten rules that guide behavior. Both types of institutions shape economic interactions, with formal institutions providing the legal and regulatory environment necessary for economic transactions, and informal institutions influencing the behaviors of individuals and organizations within that framework[133].

Institutional Isomorphism: The concept of institutional isomorphism was introduced, which describes the processes by which organizations within a particular field or sector adopt similar practices, structures, or policies in response to pressures from the environment[133]. This is particularly relevant in understanding how financial institutions in Nigeria might adopt certain international standards to enhance legitimacy, even in the presence of corruption and regulatory inefficiencies. Isomorphism can occur through coercion (e.g., through regulatory mandates), mimicking (e.g., adopting practices from more successful institutions), or normative pressures (e.g., professional standards).

Institutional Void: The concept of "institutional voids" refers to the absence or inadequacy of formal institutions in certain areas of an economy, which leads to inefficiencies, uncertainty, and distorted economic outcomes. Institutional voids are particularly problematic in developing

economies like Nigeria, where gaps in regulatory enforcement, transparency, and accountability can exacerbate corruption, inhibit financial inclusion, and undermine the effectiveness of monetary policy[134].

Institutional theory posits that well-functioning institutions are critical for fostering economic development. Institutions play a crucial role in reducing transaction costs by providing a predictable environment for economic agents to interact. Efficient institutions provide mechanisms for enforcing contracts, protecting property rights, and promoting competition, all of which contribute to higher levels of investment, innovation, and economic growth[134].

In developed economies, strong institutions enable efficient market functioning, facilitate financial intermediation, and ensure that economic resources are allocated effectively. Conversely, in developing economies like Nigeria, weak institutions result in high transaction costs, limited access to financial services, and insufficient capital flow to productive sectors of the economy. Corruption and institutional inefficiencies further exacerbate these challenges, as they distort incentives, raise risks for investors, and reduce public confidence in financial systems. Countries with robust legal systems, better governance, and transparent regulatory frameworks experience more efficient financial systems and greater financial development. In contrast, countries with weak institutions and pervasive corruption tend to have underdeveloped financial markets, limited access to capital, and reduced investor confidence[134].

Strong institutions create an environment conducive to financial development by ensuring that financial transactions are transparent, secure, and efficient. This includes a reliable legal system that enforces contracts, protects investors, and ensures that financial transactions are free from corruption. In contrast, weak institutions can hinder financial development by increasing transaction costs, limiting access to credit, and creating an unstable economic environment[133].

In Nigeria, financial development has been significantly constrained by institutional weaknesses, particularly corruption, poor regulatory oversight, and inefficient legal systems. As a result, many financial institutions operate under an opaque environment, which reduces public trust and limits financial inclusion. Institutional theory helps explain how corruption within financial institutions ranging from embezzlement of funds to bribery in loan disbursement distorts the functioning of the financial system and inhibits its growth[132,134].

Corruption is one of the most critical factors undermining institutional quality and financial development in Nigeria. According to institutional theory, corruption constitutes a significant distortion of both formal and informal institutions, as it alters the incentives for individuals and organizations, often leading to inefficient outcomes and resource misallocation[134].

In financial systems, corruption can manifest in several ways, such as bribery, regulatory capture, and favoritism in lending. Corruption undermines the effectiveness of financial intermediation by eroding the integrity of financial institutions and reducing public trust in the financial system. As a result, investors are less likely to commit capital to the economy, and financial institutions may allocate resources to politically connected or corrupt individuals and businesses rather than to productive sectors[134].

In Nigeria, corruption has been pervasive within the financial sector, with incidents of misappropriation of funds, fraudulent transactions, and bribery in the disbursement of loans. These corrupt practices not only limit access to capital for businesses but also create an environment of uncertainty, which deters foreign and domestic investment. Institutional theory thus provides a lens through which to analyze the ways in which corruption distorts financial markets and hampers financial development[132].

Institutional theory also offers valuable insights into how institutional quality impacts the effectiveness of monetary policy. For monetary policy to be successful, it requires robust institutional support, including a credible central bank, clear regulatory frameworks, and efficient enforcement mechanisms[131,133]. In environments with weak institutions, monetary policy may not achieve its objectives, as the financial system may not respond predictably to changes in policy.

Institutional theory suggests that for monetary policy to be effective, it must be supported by transparent institutions that can enforce compliance with policy measures[131]. Weak regulatory institutions hinder the transmission mechanisms of monetary policy and prevent it from reaching its full potential in stabilizing the economy and promoting financial development.

Despite its explanatory power, institutional theory has faced several criticisms and limitations:

Overemphasis on Stability: Some scholars argue that institutional theory places too much emphasis on institutional stability, overlooking the potential for institutions to evolve and adapt in response to changing conditions[132]. In rapidly developing economies like Nigeria, where institutions are constantly changing, this emphasis may limit the theory's applicability.

Neglect of Informal Institutions: Institutional theory traditionally focuses on formal institutions such as laws and regulations, often neglecting the role of informal institutions in economic development. In Nigeria, informal institutions, such as clientelism and patronage networks, play a crucial role in shaping economic behavior and financial outcomes[131].

Measurement Challenges: Institutional theory often relies on subjective measures of institutional quality, which can be difficult to quantify. The impact of corruption, for example, is challenging to assess in a consistent and standardized manner.

Institutional theory offers critical insights into the relationship between institutions and economic development, providing a valuable framework for understanding how the quality of governance,

regulatory frameworks, and financial institutions affect financial development[132]. In the Nigerian context, weak institutions and pervasive corruption have significantly hindered the growth and stability of the financial sector. By applying institutional theory, this study aims to examine how institutional quality influences the effectiveness of financial sector.

2.2.5 Endogenous Growth Theory

Endogenous growth theory has revolutionized the field of economics by providing a framework to understand how internal factors, such as technology, human capital, and innovation, contribute to long-term economic growth. Unlike the traditional neoclassical growth models, which emphasize external factors like capital accumulation and exogenous technological progress, endogenous growth theory argues that economic growth is primarily driven by factors within the economy[135]. This theory highlights the role of knowledge, human capital, innovation, and policy decisions in shaping the growth trajectory of economies, particularly in the context of developing countries.

Endogenous growth theory emerged in the 1980s as an extension and critique of the neoclassical growth models, notably the Solow-Swan model[135]. The Solow model, which emphasized capital accumulation as the driver of economic growth, had a central assumption that technological progress was exogenous, meaning that it occurred outside the model and was not influenced by economic activities. However, the Solow model could not explain the sustained growth observed in many advanced economies or the significant variation in growth rates across countries[136].

The foremost economists credited with formalizing endogenous growth models[137]. Romer's seminal paper in 1990 introduced the concept of increasing returns to scale resulting from the accumulation of knowledge, a key factor that could sustain long-term growth without the diminishing returns that the Solow model predicted[137]. Human capital as a critical driver of

productivity growth, arguing that investments in education and skill development could lead to sustained growth in the economy[137].

These foundational models shifted the focus from physical capital accumulation to the role of knowledge, human capital, and innovation in driving long-term growth, offering a framework to explain the "new growth" observed in economies where traditional factors did not account for the observed economic expansion.

Endogenous growth theory centers around several key ideas that help explain persistent economic growth. These include:

Knowledge Spillovers and Increasing Returns to Scale: One of the core insights of endogenous growth theory is that the production of ideas and innovations leads to increasing returns to scale[138]. Knowledge does not diminish with use, unlike physical capita[137]l. This implies that investments in innovation and research generate spillover effects, where the benefits of knowledge production extend beyond the individual firm or inventor, thus fostering overall economic growth. This contrasts with the neoclassical assumption of diminishing returns to capital.

Human Capital and Education: human capital as a key factor in endogenous growth. Human capital refers to the skills, knowledge, and abilities of the workforce, which are critical for driving productivity growth[138]. By investing in education and skill development, economies can increase the productivity of their workers, leading to sustained economic growth. This idea has been widely supported in the literature, as many studies have found a strong correlation between education levels and economic growth[138].

Innovation and Technological Progress: Innovation is a central driver of growth in endogenous models. Unlike the neoclassical models, where technological progress is exogenous, endogenous

growth theory posits that technological progress is the result of intentional investment in research and development (R&D) activities. The idea is that firms and individuals invest in R&D to create new technologies, which can be spread throughout the economy, contributing to higher productivity and economic expansion.

Public Policy and Institutions: Endogenous growth theory also recognizes the role of government policies and institutions in fostering long-term growth. Policies that promote education, encourage investment in R&D, protect intellectual property rights, and create conducive environments for innovation are vital for sustaining growth. The theory suggests that governments can play a direct role in shaping economic outcomes by designing policies that enhance human capital formation and stimulate innovation[135].

There are several important models that have been developed under the umbrella of endogenous growth theory. These models provide a deeper understanding of how endogenous factors, such as human capital, innovation, and knowledge accumulation, contribute to economic growth:

Romer's model is one of the most influential contributions to endogenous growth theory[137]. It focuses on the role of technological innovation as the primary driver of long-term growth. In Romer's framework, firms invest in R&D to produce new technologies, which lead to productivity increases. These innovations generate positive externalities, as they are shared across the economy, benefiting other firms and industries. Romer's model emphasizes the role of knowledge spillovers and the fact that knowledge accumulation can sustain long-term growth without diminishing returns to capital.

Lucas's model places human capital at the center of growth[137]. According to Lucas, investment in education and training leads to a more skilled workforce, which in turn raises productivity and growth. The model suggests that human capital accumulation is an endogenous process, where

individuals and firms invest in education to improve their productivity. This contrasts with the neoclassical view, which treated human capital as an exogenous factor.

While endogenous growth theory has been highly influential, it is not without its criticisms. One of the main challenges is the assumption of increasing returns to scale. Critics argue that the idea of increasing returns is not always realistic, particularly in the context of diminishing returns to innovation and knowledge[135]. Furthermore, the reliance on knowledge spillovers and externalities raises questions about how such externalities can be effectively measured and quantified.

Another criticism of endogenous growth theory is its focus on knowledge and human capital at the expense of other factors, such as natural resources and infrastructure[136]. Critics argue that the theory does not adequately address how resource constraints and environmental challenges might affect long-term growth.

Despite these criticisms, endogenous growth theory remains a powerful framework for understanding the determinants of economic growth. It provides valuable insights into the role of human capital, innovation, and policy decisions in shaping the growth trajectory of economies, particularly in the context of developing countries[137,138].

Endogenous growth theory offers a compelling explanation for the sustained and divergent growth rates observed across countries. By emphasizing the role of internal factors such as innovation, human capital, and knowledge accumulation, endogenous growth models provide a more nuanced understanding of the sources of long-term economic growth. The theory also highlights the importance of policy decisions and institutional quality in shaping growth outcomes. Despite its criticisms, endogenous growth theory remains an essential tool for understanding the dynamics of economic growth, particularly in the context of emerging economies where innovation and education are central to overcoming growth constraints.

2.3 Review of Empirical Studies

2.3.1 Monetary Policy and Financial Development

A study analyzes how sudden shifts in monetary policy referred to as monetary policy shocks affect Nigeria's financial sector. The study focuses on Nigeria, analyzing data spanning from 2000 to 2020[139]. The study uses a Vector Autoregressive Model (VAR) to model the dynamic relationship between monetary policy shocks and financial sector performance. The analysis focuses on the short- and long-term effects of monetary policy variables (such as interest rate and money supply) on the Nigerian banking sector and capital markets. The results show that monetary policy shocks, particularly those related to interest rate changes, have a significant short-term effect on bank profitability and credit access. However, the long-term effects are less pronounced, indicating that the banking sector is resilient but vulnerable to abrupt policy changes. Monetary policy shocks tend to disrupt financial market stability in the short term, but the impact on long-term growth is mitigated by adaptive measures in the banking sector. The findings reveal that monetary policy shocks have significant short-term impacts on the Nigerian financial sector, notably through immediate adjustments in credit supply and lending rates. However, the study notes that the effects tend to dissipate in the long run, suggesting that the Nigerian financial sector may lack the resilience to withstand prolonged policy shifts. The authors recommend a gradual approach to monetary policy adjustments to minimize abrupt disruptions in the financial sector and emphasize the importance of strengthening financial institutions to improve their ability to manage such shocks. The study recommends that the Central Bank of Nigeria (CBN) implement gradual monetary policy changes to prevent financial sector instability caused by abrupt policy shocks. Strengthening financial sector resilience through diversification of financial instruments and improved risk management practices is also advised.

A meta-analysis on the effects of monetary policy on financial markets within developed countries, focusing on the consistency and variation in monetary policy impacts across different economic environments[140]. The study reviews and analyzes over 50 empirical studies published between 1990 and 2020. They calculate effect sizes to determine the magnitude of monetary policy's impact on financial markets and assess the consistency of findings across studies. The analysis includes both quantitative and qualitative studies from developed economies, such as the U.S., Japan, and the EU. By synthesizing results from numerous studies, they highlight key trends and provide a broad understanding of how monetary policy influences financial markets. Their analysis reveals that interest rate adjustments by central banks not only influence inflation and economic growth but also affect financial market stability, liquidity, and asset prices. The study finds that interest rate changes are the most significant tool of monetary policy affecting financial markets, with major effects on stock prices, bond yields, and credit spreads. The effectiveness of monetary policy in stimulating financial market development is strongest in countries with well-developed financial institutions and regulatory frameworks. The authors note that the effects of monetary policy are not uniform, as they vary significantly depending on factors like the state of the economy, market expectations, and the credibility of central banks. During economic downturns, for instance, policy rate cuts tend to have a more substantial impact on stimulating market activity compared to periods of stable growth. Additionally, they emphasize that unconventional monetary policies, such as quantitative easing, have complex impacts on financial markets, leading to asset bubbles and increased financial sector risk. This meta-analysis is instrumental for understanding the broader implications of monetary policy on financial markets and is essential as it provides aggregated evidence of how policy shifts influence financial market conditions. Such findings underscore the need for caution in monetary policymaking, as policies aimed at fostering economic

growth may inadvertently increase financial market volatility. The authors recommend that policymakers should ensure a consistent and transparent monetary policy to avoid market volatility and foster investor confidence. They also stress the importance of coordinating monetary policy with financial market regulation to mitigate any potential negative effects of policy interventions on financial stability.

A study seeks to analyze the distributional impact of monetary policy and assess the influence of financial development on the link between monetary policy and income inequality. An investigation was conducted on 32 sub-Saharan African countries from 2000 to 2017[141]. The study utilized vector autoregressions and a dynamic panel data model to analyze the data. This study demonstrates that MP has a noteworthy influence on income inequality, and the financial system plays a crucial role in mitigating the unequal effects of MP shocks. Both MP and FD have direct redistributive effects. Nevertheless, it seems that the financial system has the most significant influence and plays a larger role in shaping inequality dynamics. The conclusion that is relevant to policy is that the financial system plays a crucial role in the transmission of monetary policy actions and their effects. As the economy continues to grow, it may need fewer policy adjustments to achieve the desired outcomes. In addition, it is important to consider that macroeconomic stabilisation policies may not have a neutral impact on distribution and could potentially help prevent long-term increases in inequality. In contrast to earlier research, this study suggests that structural shocks can eliminate the problems of endogenous and anticipatory actions in the MP stance. This paper presents a notable discovery: the distributional impacts of monetary policy vary significantly due to differences in monetary regimes and income across countries. However, the available evidence indicates that the transmission's strength relies more on FD rather than the specific policy regime.

Another study investigates the causal relationship between financial development and economic growth in Sub-Saharan Africa, employing panel ARDL (Autoregressive Distributed Lag) models to account for dynamic interactions over time[142]. The study examines 14 Sub-Saharan African countries over the period from 1980 to 2020. The study employs panel ARDL models, which are suitable for analyzing both long-run and short-run relationships in panel data. The study finds a bi-directional causality between financial development and economic growth in SSA. In the short-run, financial development leads to economic growth, while in the long-run, economic growth promotes financial development. The results suggest that the development of financial institutions, particularly banks, plays a crucial role in facilitating economic growth by providing credit and other financial services. The study also highlights the importance of financial liberalization and banking sector reforms to enhance access to credit and improve financial market efficiency. The study recommends that policymakers in SSA focus on enhancing financial inclusion by improving access to financial services for both individuals and businesses. Efforts should be made to strengthen the banking sector, improve financial market infrastructure, and promote financial literacy to foster long-term economic growth. Structural reforms in the financial sector are necessary to ensure that financial institutions can effectively support economic activities and contribute to growth.

The transmission mechanisms of monetary policy across various Sub-Saharan African nations. The study spans 2000 to 2017[143]. The study uses panel data econometric techniques to analyze the effectiveness of monetary policy transmission mechanisms across SSA countries. It applies a VAR (Vector Autoregression) model to test the influence of key policy variables like interest rates, exchange rates, and money supply on economic outcomes such as output, inflation, and private sector credit. A comparative approach is employed, examining differences between countries with

different institutional settings and monetary policy frameworks. The paper finds that monetary policy transmission is often weak and heterogeneous across SSA countries. While monetary policy measures have an impact, the transmission mechanisms vary significantly due to institutional differences, macroeconomic conditions, and financial sector characteristics. Countries with stronger financial sectors and better institutional frameworks show more effective transmission of monetary policy. Conversely, countries with weaker institutions and undeveloped financial systems experience delayed or muted responses to policy actions. Their findings reveal that the efficacy of monetary policy in influencing economic outcomes varies widely across the region due to differences in institutional strength and market depth. For example, in countries with more developed financial systems, monetary policy changes have a more immediate and measurable impact on economic variables likes inflation and credit growth. Conversely, in countries with weaker financial markets, the policy transmission is less effective. This study underscores the need for Sub-Saharan African policymakers to consider local financial infrastructure when designing monetary policies to achieve optimal outcomes. The study highlights the complexity of applying uniform monetary policy approaches across diverse economies within the region. The study suggests that SSA countries need to strengthen their financial sectors and improve institutional capacity to ensure more effective monetary policy transmission. Coherent fiscal and monetary policies should be adopted to align macroeconomic goals and improve policy effectiveness.

The link between monetary policy and financial sector development in Sub-Saharan African countries[144]. Using econometric models, they analyze how changes in money supply and interest rates affect the growth and performance of the financial sector. The results suggest that while expansionary monetary policy can stimulate financial sector growth, its effectiveness is often constrained by structural weaknesses, such as limited access to financial services and

underdeveloped financial markets. The authors recommend that for monetary policy to be effective, it must be accompanied by structural reforms aimed at deepening financial markets and enhancing financial access. The study is particularly relevant for understanding how the unique economic conditions in Sub-Saharan Africa shape the outcomes of monetary policy. This study emphasizes the necessity of addressing foundational financial market structures to realize the benefits of monetary policy in the region.

The impact of financial development on poverty reduction in Sub-Saharan Africa using dynamic panel data analysis. By focusing on financial depth and access as proxies for financial development, the author examines how improvements in the financial sector contribute to poverty alleviation[145]. The study covers 20 Sub-Saharan African countries over the period from 1990 to 2019. The study uses a dynamic panel data model (specifically the GMM estimator) to examine the relationship between financial development and poverty reduction. Poverty reduction is measured using income per capita and poverty headcount ratio, while financial development is assessed by credit growth, financial inclusion, and banking sector depth. The study employs a Generalized Method of Moments (GMM) approach to address endogeneity concerns and to better capture the dynamic interactions between financial development and poverty reduction. The study finds a positive relationship between financial development and poverty reduction in SSA. Access to credit and financial services enable individuals and small businesses to invest in education, health, and income-generating activities, leading to improved living standards. The paper also identifies that financial inclusion and microfinance services play a significant role in poverty alleviation by improving access to capital for the unbanked population. However, the relationship is not uniform across all SSA countries. The study finds that the effectiveness of financial development in reducing poverty is contingent upon the strength of institutions and the quality of governance. The

findings show that enhanced financial development has a statistically significant impact on poverty reduction, suggesting that policies promoting financial inclusion and broadening access to credit can be instrumental in lifting people out of poverty. Nti argues that policy interventions should focus on expanding financial services, particularly in rural and underserved areas, to maximize the poverty-alleviating effects of financial sector growth. The study recommends that financial inclusion be prioritized by policymakers to ensure that marginalized populations have access to financial services that can help alleviate poverty. Efforts should be made to enhance the regulatory environment and institutional framework to improve the effectiveness of financial services in supporting poverty reduction initiatives. It is crucial to promote financial literacy and increase public awareness of available financial products and services.

2.3.2 Money Supply, Interest Rate and Financial Development

A study investigate the interplay between monetary policy and financial sector development across Sub-Saharan Africa[144]. They analyze how monetary policy decisions, such as interest rate adjustments and money supply changes, influence financial sector growth in terms of depth, access, and efficiency. The study examines Sub-Saharan African countries, covering the period from the early 2000s to 2017. Panel data analysis is employed to investigate the relationship between monetary policy and financial sector development.

Monetary policy is found to have a significant influence on financial sector development, particularly through its impact on interest rates and money supply. In SSA, tight monetary policies can restrict credit availability, while loose monetary policies tend to increase financial sector activity by boosting credit flows. Inflation targeting and interest rate management play critical roles in stabilizing financial systems, though financial sector development is also constrained by external factors like global financial shocks and domestic institutional weaknesses. The study

concludes that, while expansionary monetary policy generally promotes financial sector growth, structural weaknesses, including underdeveloped financial markets and limited policy transmission mechanisms, hinder the effective implementation of these policies. The authors suggest that financial market reforms and stronger institutional frameworks are necessary to enhance the efficacy of monetary policy in the region. This study underscores the importance of tailoring monetary policy approaches to the specific financial market structures within Sub-Saharan Africa to achieve sustainable financial development, making a compelling case for strengthening the region's institutional capacity. Policymakers in SSA should adopt flexible monetary policy frameworks that can respond to both external shocks and domestic financial sector needs. The study recommends enhancing financial inclusion and promoting policies that encourage private sector credit growth to support long-term financial sector development.

A comparative analysis of monetary policy transmission mechanisms in developed economies, offering valuable insights into how different channels such as interest rate, credit, and exchange rate channels affect financial development. The study focuses on a cross-section of developed economies, including the United States, the Euro area, and Japan[146]. The analysis covers a period from 2000 to 2019, particularly focusing on the period after the 2008 global financial crisis, which saw significant changes in monetary policy frameworks. The authors use a comparative econometric approach, employing a VAR (Vector Autoregressive) model to analyze the transmission of monetary policy across different economies. The study finds that monetary policy transmission varies significantly across developed economies. While interest rate changes have a strong impact on financial markets and inflation in the U.S. and the Euro area, quantitative easing has a more pronounced effect in Japan, which has relied heavily on non-traditional monetary policy measures. Financial markets in the U.S. and Euro area are highly sensitive to interest rate

changes, whereas Japan's reliance on long-term bond purchases has a more direct effect on financial market liquidity and stability. Their analysis reveals significant variations in the way monetary policy impacts financial stability and development across developed economies. For instance, economies with more open financial markets and advanced institutional structures tend to exhibit stronger responses to policy rate changes, which effectively influence financial market liquidity and investment flows. Conversely, in economies with less flexible institutional arrangements, policy transmission is less effective, leading to delays in achieving financial stability objectives. This study's comparative perspective is beneficial for understanding the differential impacts of monetary policy and the importance of customizing policy tools to fit specific economic structures. The article provides evidence on the significance of the transmission mechanism in realizing financial stability and growth, reinforcing the need to consider country-specific structural factors in monetary policymaking. The authors recommend that central banks in developed economies continue to tailor their monetary policy tools to country-specific conditions, considering the structural characteristics of their financial markets. The study suggests that policymakers should closely monitor the spillover effects of unconventional monetary policies, particularly in terms of asset prices and financial stability.

A study examining how monetary policy instruments, specifically interest rates and money supply, influence Nigeria's financial sector development. The study covers the Nigerian financial sector, examining data from 1981 to 2018[147]. The researchers employ an Ordinary Least Squares (OLS) regression model to analyze the relationship between monetary policy variables (interest rate and money supply) and financial development indicators (financial depth and financial access). They use time series data obtained from the Central Bank of Nigeria (CBN) and the World Bank. The study finds that the money supply has a positive and significant impact on financial sector

development, suggesting that an increase in money supply enhances financial depth in Nigeria. On the other hand, interest rates are negatively correlated with financial development, indicating that high-interest rates may constrain financial growth and accessibility in the Nigerian context. Lower interest rates and a greater money supply are observed to positively affect financial depth, enhancing the sector's overall development. However, the authors highlight inefficiencies in Nigeria's monetary policy transmission mechanisms, suggesting that the intended benefits of policy adjustments on financial development may be delayed or diluted. These findings indicate that although monetary policy plays a crucial role in fostering financial sector growth, the structural inefficiencies within Nigeria's financial system reduce the effectiveness of these policies. The study suggests addressing these structural challenges to improve the responsiveness of Nigeria's financial sector to monetary policy changes. The study recommend that Nigerian policymakers adopt a balanced monetary policy approach, one that encourages financial access through increased money supply while carefully managing interest rates to support sustainable financial sector development. They advocate for the Central Bank of Nigeria to periodically review interest rates and align them with the country's financial development objectives.

2.3.3 Monetary Policy and Financial Stability

In a study on cross-country analysis of the link between monetary policy and financial stability, particularly focusing on how central banks' policy actions impact the financial sector in developed economies[148]. The study includes data from a sample of developed countries, such as the U.S., the EU, Japan, and the UK. The authors focus on the period from 1980 to 2019, covering both financial crises and periods of monetary policy interventions. The authors use a panel data regression approach to analyze the relationship between monetary policy tools (interest rates and money supply) and financial stability. They also examine the role of institutional settings in

mediating the effects of monetary policy. The study uses data on financial stability indicators such as banking sector stability, credit growth, and financial market performance. Their research highlights that while monetary policy traditionally focuses on managing inflation and fostering economic growth, it also has crucial, sometimes unintended, implications for financial stability. The authors argue that low-interest-rate environments, often employed by central banks to stimulate economic growth, can potentially lead to financial instability by encouraging excessive risk-taking and asset price inflation within the financial sector. The authors analyze data across several developed countries and employ a range of econometric models to observe how monetary policy shifts influence financial stability indicators, such as bank lending standards, capital market trends, and overall market volatility. The study found that financial sector in developed economies is heavily influenced by central bank actions, which are seen as crucial to maintaining stability. The relationship between monetary policy and financial stability is non-linear, with positive effects in the short term, but potential risks in the long run, such as asset bubbles. The study concludes that while expansionary monetary policies may stimulate short-term economic growth, they also carry risks that can undermine financial stability if maintained over extended periods. This study underscores the need for a balanced approach to monetary policy in developed economies, considering both its short-term benefits and long-term implications on financial stability and development. This study provides significant evidence on the complex relationship between monetary policy and financial development, illustrating how central banks' policies can have cascading effects on financial stability beyond their traditional objectives. The authors recommend that central banks adopt a cautious approach to interest rate cuts and focus on long-term stability. They suggest that financial stability frameworks should be more integrated with monetary policy,

with more robust macro-prudential policies to mitigate risks associated with prolonged periods of low interest rates.

Another study explore the linkage between financial development and economic growth in advanced economies, contributing to the long-standing debate on the role of financial systems in promoting economic development[149]. The study focuses on a sample of 20 advanced economies from 1980 to 2018, including major economies such as the U.S., Germany, and Japan. They utilize extensive panel data from advanced economies to assess how different aspects of financial development—such as financial depth, financial access, and financial stability—relate to economic growth rates. The study finds a positive relationship between financial development and economic growth in advanced economies. Financial development fosters economic growth by improving the allocation of resources, increasing access to capital, and promoting innovation. The relationship between financial development and growth is bidirectional, with economic growth also contributing to the development of the financial sector. This study offers a comprehensive perspective on the role of financial development in economic growth and underscores the importance of effective regulatory frameworks to maintain stability. Beck and Levine's research highlights the dual role of financial development as both a driver of growth and a potential source of risk, supporting the thesis topic's emphasis on financial stability as an essential factor in sustainable economic development. Policymakers should balance monetary policy interventions to foster financial market growth without encouraging excessive risk-taking. Anti-corruption measures are essential for promoting financial sector integrity and reducing inequality in access to finance. Financial regulation should adapt to the digital economy to improve financial inclusion and foster innovation.

A study explore the critical role central banks play in maintaining financial stability within developed economies, with a focus on how central banks' monetary policy frameworks adapt to prevent and mitigate financial crises[150]. The authors discuss various tools employed by central banks, such as interest rate adjustments and regulatory measures, to stabilize the financial sector and safeguard it against excessive risks. They argue that financial stability objectives have increasingly become a core component of central bank mandates. The research focuses on central banks in developed economies, particularly the United States, Eurozone, and Japan. The study provides a historical context of central banking practices, with a focus on the period after the 2008 global financial crisis, a time of heightened interest in the role of central banks in maintaining stability. Qualitative analysis of central banking practices, drawing on historical data and case studies from major developed economies. Discussion of how monetary policy tools (such as interest rates, quantitative easing, and forward guidance) were used during periods of financial instability. Central banks play a critical role in maintaining financial stability, especially through monetary policy interventions aimed at restoring confidence in the financial system. Quantitative easing and interest rate manipulation have been key tools in promoting economic recovery and stabilizing financial markets in the aftermath of the 2008 financial crisis. The study emphasizes that central banks need to strike a balance between achieving monetary policy goals and addressing financial stability concerns, as the two can sometimes be at odds. Cecchetti and Schoenholtz's findings underscore the importance of macroprudential policies in addressing systemic risks, and they advocate for central banks to maintain flexibility in policy instruments to adapt to changing financial conditions. This study offers insight into how monetary policy can be leveraged to enhance financial stability, particularly in developed economies where financial markets are complex and highly interconnected. This supports the notion that financial stability

should be integrated into the broader objectives of monetary policy, especially in economies aiming for sustained financial development. Central banks must be flexible in their approach to monetary policy, using a combination of tools to respond effectively to crises. Future monetary policy should be geared toward preventing financial instability and ensuring that central banks can react swiftly to emerging threats, including global financial contagion.

The relationship between monetary policy, financial conditions, and financial stability in advanced economies, focusing on how policy decisions affect financial stability indicators such as credit growth, asset prices, and risk-taking behaviours[151]. They argue that while monetary policy traditionally targets inflation and output, its influence on financial stability cannot be overlooked. Using data from advanced economies, the study assesses how low-interest-rate environments impact financial stability by encouraging risk-taking in financial markets and creating potential vulnerabilities. The study focuses on advanced economies such as the U.S., Eurozone, and Japan. The study uses empirical models to examine the relationship between monetary policy actions (interest rate changes, quantitative easing, etc.) and various indicators of financial stability (e.g., asset prices, credit conditions). Monetary policy has a profound impact on financial conditions, especially through its influence on interest rates, asset prices, and credit conditions. The study highlights that aggressive monetary policy, such as quantitative easing, can have both positive and negative effects on financial stability. The study finds that while easy monetary policies (low interest rates, asset purchases) help stimulate economic activity and stabilize markets, they can also lead to financial imbalances, such as asset bubbles and excessive risk-taking in financial markets. Their findings reveal that expansionary monetary policies, while effective in stimulating economic growth, can also lead to increased financial market risk by fueling asset price bubbles and promoting excessive leverage. The authors advocate for incorporating financial stability

considerations into monetary policy frameworks, suggesting that central banks should not only monitor inflation but also keep an eye on financial stability indicators to prevent crises. The article provides empirical support for the argument that monetary policy has far-reaching effects beyond inflation control, influencing financial stability and development. This underscores the need for a holistic approach to monetary policy, where financial stability objectives are integrated to ensure sustainable economic growth and financial sector resilience. Central banks should carefully balance monetary policy and macro-prudential regulation to avoid creating financial instability. There is a call for international coordination in monetary policy, especially in light of global financial linkages and the impact of global monetary policy on domestic financial systems.

2.3.4 Corruption and Financial Development

A study examines the relationship between corruption and financial development in Sub-Saharan Africa using panel data analysis[152]. His study reveals that corruption negatively impacts financial development by undermining investor confidence, distorting financial resource allocation, and reducing financial accessibility. The study covers 48 Sub-Saharan African countries over the period from 2000 to 2018. The study uses the panel data regression technique, specifically the Fixed Effects (FE) model, to analyze the data. Corruption is measured using the Corruption Perceptions Index (CPI), while financial development is assessed through private sector credit, banking sector depth, and financial inclusion indices. The model controls for various macro-economic factors such as GDP growth, inflation, and exchange rates. The study finds a significant negative relationship between corruption and financial development in SSA. Corruption inhibits financial growth by reducing trust in financial institutions and creating inefficiencies in credit allocation. Corruption exacerbates financial exclusion and limits private sector access to credit, hindering the development of local businesses. The study also finds that institutional quality (e.g.,

the rule of law, property rights) is a crucial moderating factor. Countries with stronger institutions are better able to counter the effects of corruption on financial development. The findings emphasize that corruption is a significant barrier to financial growth, suggesting that anti-corruption reforms are essential for enhancing financial sector performance. Asongu advocates for policy measures aimed at reducing corruption to foster an environment where financial institutions can thrive. This article contributes to the empirical literature on corruption's adverse effects on financial development in the region, providing valuable insights into how governance and institutional integrity are crucial to financial growth. This research supports the argument that reducing corruption is critical to unlocking the potential of Sub-Saharan Africa's financial sector. Anti-corruption policies should be strengthened in SSA to improve financial sector development and economic growth. Institutional reforms to enhance the effectiveness of legal and regulatory frameworks are essential to reduce corruption and foster a more conducive environment for financial sector growth.

The impact of corruption on financial development using panel quantile regression analysis, a method that enables the examination of this relationship across various levels of financial development in both developed and developing economies from countries with robust financial systems to those with underdeveloped ones[153]. The period of analysis spans from 1995 to 2017. Data sources include the World Bank, Transparency International, and national financial reports. Their research argues that corruption, by distorting financial flows and weakening regulatory frameworks, can severely inhibit financial development. The study finds that corruption negatively impacts financial development in both developed and developing countries, though the effects vary at different quantiles. They find that the degree to which corruption affects financial development varies based on a country's existing financial system maturity, showing that corruption has more

profound adverse effects on less-developed financial systems. Their findings indicate that in countries with weaker financial infrastructures, corruption significantly hinders financial development by limiting access to credit, increasing transaction costs, and promoting informal financial activities over formal sector growth. In contrast, more advanced economies exhibit resilience against corruption's effects due to stronger institutions and regulatory frameworks that can mitigate corruption-related risks. This nuanced analysis is valuable for understanding how corruption interacts with financial development, especially in countries where financial systems are in a growth phase and are thus more susceptible to negative influences. Farzanegan and Krieger's study can provide empirical evidence on how corruption disrupts the financial development process, making a case for stronger governance and anti-corruption measures to facilitate financial sector growth. The authors recommend that countries, especially those with developing financial systems, focus on strengthening anti-corruption policies and improving transparency in the financial sector. They also suggest that international cooperation is necessary to combat corruption, as it is often a transnational issue that requires a coordinated response.

Another study explores the long-term relationship between corruption and financial development in Nigeria. The paper focuses on Nigeria, using data from 1990 to 2018. The authors employ the Autoregressive Distributed Lag (ARDL) model to analyze time series data[154]. This approach is suitable for capturing the long-run equilibrium relationship between corruption and financial development. Key data sources include the Central Bank of Nigeria, Transparency International, and the World Bank. Corruption is measured using corruption perception indices, while financial development is assessed through indicators like financial depth and access. Specifically, corruption diminishes investor confidence, limits foreign investment, and restricts financial accessibility, stunting the financial sector's growth over time. The study reveals a significant negative

relationship between corruption and financial development in the long run. High corruption levels were found to weaken financial institutions and hinder investment, leading to reduced financial access and depth. Corruption also deters foreign investment, undermines trust in financial institutions, and limits the growth potential of Nigeria's financial sector. The research emphasizes that corruption undermines Nigeria's financial development potential by eroding institutional quality and reducing the credibility of financial governance. The authors argue that implementing stronger anti-corruption policies could improve financial sector outcomes, suggesting that governance reforms should accompany monetary policy interventions to support a more resilient financial system in Nigeria. Ogunleye and Ayeni recommend that Nigerian authorities strengthen anti-corruption policies to foster a conducive environment for financial development. They call for institutional reforms to enhance transparency and accountability, particularly within financial regulatory bodies. Additionally, they suggest that public awareness and stakeholder engagement in anti-corruption initiatives could help mitigate the adverse impacts of corruption on financial development.

A study explores the long-term relationship between corruption and financial development in Nigeria. The research focuses on Nigeria, with data spanning from 1995 to 2020[155]. The study employs Johansen cointegration analysis to investigate the long-run relationship between corruption (measured using the Corruption Perception Index (CPI)) and financial development (measured using indicators like credit to the private sector, financial inclusion, and capital market liquidity). The authors also use error correction models (ECM) to examine the short-run dynamics and long-run equilibrium between the variables. The study finds a long-term negative relationship between corruption and financial development. Corruption significantly hampers financial sector performance by increasing transaction costs, reducing transparency, and deterring foreign

investment. There is a significant short-run impact where corruption leads to financial market inefficiencies, but the long-term relationship is more stable, indicating that the effects of corruption can be mitigated with institutional reforms. Their results indicate a strong inverse relationship between corruption and financial development; that is, as corruption levels increase, financial development deteriorates. The study concludes that corruption erodes public trust in financial institutions, discourages investment, and limits access to financial services, which hampers financial development. Adewuyi and Emmanuel suggest that sustained efforts to reduce corruption could significantly improve financial development in Nigeria. They advocate for stricter regulatory enforcement, transparency measures, and institutional reforms aimed at curbing corrupt practices within Nigeria's financial and public sectors. The study recommends strengthening anti-corruption frameworks and promoting transparency in financial institutions to reduce the negative effects of corruption on financial development. There should be a focus on improving financial market regulation to encourage greater accountability and investment.

Study examines the combined effect of corruption and institutional quality on financial development in Nigeria. The study is focused on Nigeria, analyzing the relationship between institutional quality, corruption, and financial development over the period 2005-2019[156]. The study uses panel data to assess the joint effects of corruption (measured using CPI and other indices) and institutional quality (such as regulatory quality, rule of law, and governance) on financial development in Nigeria. The research employs the Generalized Method of Moments (GMM) estimator to account for the dynamic nature of the relationship and to deal with endogeneity issues. Corruption negatively impacts financial development in Nigeria, as it increases the cost of doing business and reduces the efficiency of financial institutions. Institutional quality plays a critical moderating role; the better the institutions, the less the

detrimental impact of corruption on the financial sector. Poor governance and weak institutions exacerbate the negative effects of corruption by encouraging fraudulent practices and poor resource allocation. The paper finds that strong institutions can reduce the cost of financial transactions and promote financial inclusion, leading to higher levels of financial development. Their results indicate that high levels of corruption in Nigeria reduce financial stability and inhibit financial access, while better regulatory frameworks and governance structures encourage investment and support financial sector growth. Umar and Abdulhakeem suggest that improving institutional quality can act as a buffer against the detrimental effects of corruption on the financial system. The authors recommend prioritizing anti-corruption policies alongside regulatory reforms to strengthen institutional quality, thereby supporting financial development even in the presence of corruption challenges. The study recommends a comprehensive anti-corruption strategy focused on improving institutional quality, especially in key areas such as public sector transparency, rule of law, and regulatory frameworks. There should be a focus on building stronger institutions to ensure that financial markets and institutions can function efficiently and equitably, without being undermined by corruption.

2.3.5 Monetary Policy, Exchange rate and Financial Development

The interaction between monetary policy, exchange rate volatility, and financial development in Nigeria. The study is focused on Nigeria, with an analysis spanning from 2000 to 2018. The study uses autoregressive distributed lag (ARDL) models to analyze the short- and long-term effects of exchange rate volatility and monetary policy on financial development[159]. Key variables include monetary policy indicators (interest rates, money supply), exchange rate volatility, and financial development indicators such as private sector credit, banking sector depth, and capital market growth. The study also uses time series data analysis to account for the dynamic relationship

between the exchange rate, monetary policy, and financial development. The study finds that monetary policy in Nigeria has significant short-term effects on exchange rate volatility, which in turn impacts financial development. However, the long-term effects are less pronounced, suggesting that structural factors in the Nigerian economy limit the effectiveness of monetary policy in fostering sustained financial development. High exchange rate volatility has a detrimental effect on financial market stability. This volatility increases uncertainty in investment decisions, deters foreign direct investment (FDI), and negatively affects banking sector performance by increasing risks associated with cross-border transactions and credit provision. Exchange rate volatility has been shown to slow down financial sector development, as financial institutions face greater risk and uncertainty. However, sound monetary policies could help mitigate some of these effects by promoting stability in the exchange rate. The findings indicate that exchange rate volatility weakens the influence of monetary policy on financial depth and financial stability, leading to reduced foreign investment and financial sector instability. The study recommends that stabilizing the exchange rate through diversification of Nigeria's export base and implementing exchange rate-targeted policies could enhance the resilience of Nigeria's financial sector. This would enable monetary policy to exert a more consistent impact on financial development outcomes. The study recommends that the Central Bank of Nigeria (CBN) adopt exchange rate stabilization mechanisms, such as foreign exchange interventions and inflation targeting, to reduce volatility and enhance financial market stability.

The research seeks to examine how monetary policy interest rates, real exchange rates, and the business environment in the Euro region affect financial development in Romania[60]. A pre-test for structural breaks was first run to detect any breaks in the data, followed by conventional unit root tests and unit root tests with structural breaks to evaluate the stationarity of the variables. The

Bound cointegration test was used to create an autoregressive distributed lag (ARDL) short-run model to assess the short-term effects of the variables on Romania's economic development. In the near term, economic growth is hindered by the interest rate but boosted by the exchange rate, according to the research. The business environment in the Euro region has varying impacts on economic growth. The findings have important implications for controlling interest and exchange rates to support economic development, especially given the growing interconnectedness between Romania's domestic and international business ecosystems.

This paper investigates the impact of financial development on the level of debt dollarization among nonfinancial firms in a selection of emerging market economies (EMEs). The macroeconomic channels are identified through an optimal portfolio allocation model and evaluated by analyzing the accounting information of nonfinancial firms from 21 emerging market economies during the period of 2009 to 2017. Based on the findings, it is evident that the level of financial development, as indicated by the private credit-to-GDP ratio, plays a significant role in mitigating the impact of exchange rate volatility on a firm's debt currency composition, along with other factors. In addition, the impact of exchange rate volatility loses its statistical significance once the estimated threshold credit-to-GDP ratio exceeds 100 percent.

2.3.6 Monetary Policy, Corruption and Financial Development

A study seeks to analyze the distributional impact of monetary policy and assess the influence of financial development on the link between monetary policy and income inequality. An investigation was conducted on 32 sub-Saharan African countries from 2000 to 2017[141]. The study utilized vector autoregressions and a dynamic panel data model to analyze the data. This study demonstrates that MP has a noteworthy influence on income inequality, and the financial system plays a crucial role in mitigating the unequal effects of MP shocks. Both MP and FD have direct

redistributive effects. Nevertheless, it seems that the financial system has the most significant influence and plays a larger role in shaping inequality dynamics. The conclusion that is relevant to policy is that the financial system plays a crucial role in the transmission of monetary policy actions and their effects. As the economy continues to grow, it may need fewer policy adjustments to achieve the desired outcomes. In addition, it is important to consider that macroeconomic stabilisation policies may not have a neutral impact on distribution and could potentially help prevent long-term increases in inequality. In contrast to earlier research, this study suggests that structural shocks can eliminate the problems of endogenous and anticipatory actions in the MP stance. This paper presents a notable discovery: the distributional impacts of monetary policy vary significantly due to differences in monetary regimes and income across countries. However, the available evidence indicates that the transmission's strength relies more on FD rather than the specific policy regime.

Another study investigates the causal relationship between financial development and economic growth in Sub-Saharan Africa, employing panel ARDL (Autoregressive Distributed Lag) models to account for dynamic interactions over time[142]. The study examines 14 Sub-Saharan African countries over the period from 1980 to 2020. The study employs panel ARDL models, which are suitable for analyzing both long-run and short-run relationships in panel data. The study finds a bi-directional causality between financial development and economic growth in SSA. In the short-run, financial development leads to economic growth, while in the long-run, economic growth promotes financial development. The results suggest that the development of financial institutions, particularly banks, plays a crucial role in facilitating economic growth by providing credit and other financial services. The study also highlights the importance of financial liberalization and banking sector reforms to enhance access to credit and improve financial market efficiency. The

study recommends that policymakers in SSA focus on enhancing financial inclusion by improving access to financial services for both individuals and businesses. Efforts should be made to strengthen the banking sector, improve financial market infrastructure, and promote financial literacy to foster long-term economic growth. Structural reforms in the financial sector are necessary to ensure that financial institutions can effectively support economic activities and contribute to growth.

The transmission mechanisms of monetary policy across various Sub-Saharan African nations. The study spans 2000 to 2017[143]. The study uses panel data econometric techniques to analyze the effectiveness of monetary policy transmission mechanisms across SSA countries. It applies a VAR (Vector Autoregression) model to test the influence of key policy variables like interest rates, exchange rates, and money supply on economic outcomes such as output, inflation, and private sector credit. A comparative approach is employed, examining differences between countries with different institutional settings and monetary policy frameworks. The paper finds that monetary policy transmission is often weak and heterogeneous across SSA countries. While monetary policy measures have an impact, the transmission mechanisms vary significantly due to institutional differences, macroeconomic conditions, and financial sector characteristics. Countries with stronger financial sectors and better institutional frameworks show more effective transmission of monetary policy. Conversely, countries with weaker institutions and undeveloped financial systems experience delayed or muted responses to policy actions. Their findings reveal that the efficacy of monetary policy in influencing economic outcomes varies widely across the region due to differences in institutional strength and market depth. For example, in countries with more developed financial systems, monetary policy changes have a more immediate and measurable impact on economic variables likes inflation and credit growth. Conversely, in countries with

weaker financial markets, the policy transmission is less effective. This study underscores the need for Sub-Saharan African policymakers to consider local financial infrastructure when designing monetary policies to achieve optimal outcomes. The study highlights the complexity of applying uniform monetary policy approaches across diverse economies within the region. The study suggests that SSA countries need to strengthen their financial sectors and improve institutional capacity to ensure more effective monetary policy transmission. Coherent fiscal and monetary policies should be adopted to align macroeconomic goals and improve policy effectiveness.

A study provides a detailed sectoral analysis of how corruption affects various aspects of financial development in Nigeria. This study covers Nigeria as a case study, with a focus on sectoral performance in financial development[157]. The study spans the period 2000 to 2020. The study uses sectoral data on Nigerian financial institutions, specifically the banking sector, capital markets, and microfinance institutions. Regression analysis is employed to examine the relationship between corruption (measured using corruption indices such as CPI and sector-specific corruption indicators) and the level of financial development in the various sectors. The study also employs panel data techniques to assess the dynamic relationship between sectoral corruption and financial development over time. The study found out that Corruption in Nigeria's banking sector has led to reduced credit access for small and medium enterprises (SMEs), undermining financial inclusion. High levels of corruption in bank governance and lending practices inhibit the effective allocation of resources and contribute to financial instability. In the capital markets, corruption hampers transparency and reduces investor confidence, which in turn leads to lower market liquidity and capital inflows. This results in a slow development of Nigeria’s equity markets. Corruption in microfinance institutions undermines their ability to extend credit to the unbanked population, stifling potential poverty alleviation efforts through financial inclusion. The study concludes that

corruption reduces investor confidence and stifles financial innovation, ultimately impairing sectoral growth within the financial system. To mitigate these issues, Akinyemi and Fashola recommend sector-targeted anti-corruption measures, suggesting that each sector requires a tailored approach to improve transparency and foster financial development. To address these sectoral challenges, the study recommends enhanced regulatory oversight and anti-corruption initiatives aimed at improving governance within the banking, capital market, and microfinance sectors.

A comparative study on the impact of corruption on financial development in both developed and developing countries, highlighting the varying degrees of influence corruption has depending on institutional strength and governance structures[158]. The study uses data from developed and developing countries to compare the effects of corruption on financial sector development. The study uses panel data regression techniques to analyze the relationship between corruption and financial development in both types of economies. Financial development is measured through indicators such as credit to the private sector, banking sector health, and stock market depth. Corruption is measured using the Corruption Perception Index (CPI) and other corruption-related indices. The study shows that in developed countries with strong institutions, the adverse effects of corruption on financial development are mitigated, while in developing countries, where institutions are often weaker, corruption has a significantly more detrimental effect on financial growth. Khan uses panel data analysis and controls for institutional quality to distinguish between the financial developments outcomes in both contexts. Corruption has a significant negative impact on financial development in both developed and developing countries, but the effect is more pronounced in developing economies, where weak institutions exacerbate the problem. In developed countries, corruption tends to have a lesser direct impact on financial sector growth,

largely due to stronger institutions and better regulatory frameworks. Corruption in developing countries leads to financial inefficiency, reduced access to credit, and a lack of trust in financial institutions, which undermines overall economic growth. The findings suggest that corruption obstructs financial development by distorting resource allocation, reducing investor confidence, and limiting access to financial services, especially in developing countries. Conversely, developed economies with robust institutional frameworks can better counterbalance the negative impact of corruption through regulatory oversight and strong legal frameworks. This research provides comparative insights into how corruption affects financial development, emphasizing that the effectiveness of anti-corruption measures is contingent on institutional quality. This aligns with arguments for strengthening institutions as a means of fostering financial development, particularly in corruption-prone environments. Governments, especially in developing economies, should strengthen institutions and promote transparency in order to mitigate the negative impacts of corruption on financial development. Policymakers should focus on creating strong regulatory frameworks to ensure that financial institutions remain stable and accountable, reducing the space for corrupt practices.

2.4 Conceptual Model

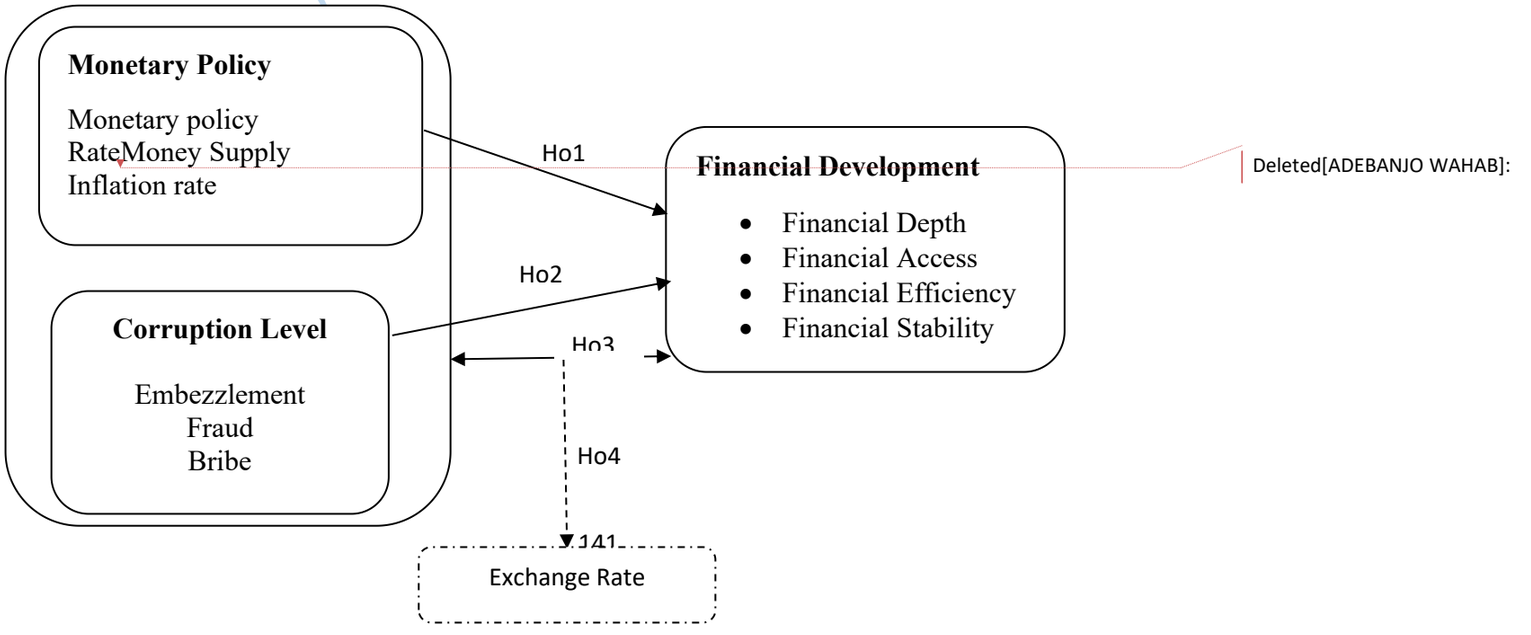

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Fig 2.1: Conceptual Model of Monetary Policy, Corruption and Financial Development
Source: Researcher's Conceptual Model, 2024

The relationship between financial development, monetary policy, and corruption in Nigeria can be conceptualized through a comprehensive framework that integrates these variables. This framework examines how financial development, characterized by its depth, access, efficiency, and stability, is influenced by monetary policy and corruption levels, while controlling for the exchange rate. Financial development encompasses various dimensions. Depth refers to the size and liquidity of financial markets, indicated by metrics such as credit to the private sector, stock market capitalization, and bond market development. Access pertains to the availability of financial services to individuals and businesses, measured by the number of bank branches, ATMs, and access to credit. Efficiency involves the performance of financial intermediaries in terms of cost, revenue, and profit efficiency, including interest rate spreads and overhead costs. Stability indicates the resilience of financial institutions and markets to shocks, assessed through measures of non-performing loans, capital adequacy ratios, and market volatility.

Corruption is a significant independent variable that affects both monetary policy and financial development. Corruption manifests in various forms, including bribery, which involves giving or receiving something of value to influence official actions; embezzlement, where assets are withheld for conversion (theft) by someone entrusted with them; and fraud and extortion, which involve deceptive practices to secure unlawful gain and obtaining something through force or threats. Monetary policy is another crucial independent variable, encompassing aspects such as money supply, which is the total amount of monetary assets available in an economy; policy interest rate, set by the central bank to influence other interest rates; and inflation, the rate at which the general level of prices for goods and services rises, eroding purchasing power. The exchange rate serves as a control variable, representing the value of one currency in terms of another.

The influence of monetary policy on financial development in Nigeria. Changes in the money supply, policy interest rate, and inflation are expected to impact financial depth, access, efficiency, and stability. The Theory of Monetary Policy Transmission Mechanisms provides a framework for understanding how these policy actions by central banks influence the economy, particularly financial markets and institutions. A well-functioning monetary policy can enhance financial development by ensuring liquidity, controlling inflation, and maintaining interest rate stability, which are critical for a robust financial sector.

The influence of corruption on monetary policy in Nigeria. Corruption, through bribery, embezzlement, and fraud/extortion, can distort the formulation and implementation of monetary policy. For instance, bribery might lead to preferential lending, affecting money supply dynamics, while embezzlement can result in the inefficient allocation of resources, undermining the effectiveness of policy interest rates. This distortion can weaken the transmission mechanisms of monetary policy, making it less effective in achieving its goals.

The influence of corruption on financial development in Nigeria. Corruption can directly impact financial development by weakening institutional quality, reducing investor confidence, and increasing transaction costs. Bribery and embezzlement, for example, can lead to misallocation of resources and inefficiencies in financial institutions, hampering their ability to provide financial services efficiently. Fraud and extortion can erode trust in financial systems, discouraging investments and savings, which are vital for financial depth and stability.

The causal relationship among monetary policy, corruption, and financial development in Nigeria. This involves using econometric models to identify causal pathways and interactions among these variables. The bidirectional causality suggested by the Theory of Monetary Policy Transmission Mechanisms can be tested, where monetary policy influences financial development and, in turn,

financial development affects the effectiveness of monetary policy. Corruption can further complicate these relationships by introducing inefficiencies and distortions. Integrating the Theory of Monetary Policy Transmission Mechanisms, this study aims to provide a comprehensive understanding of the interactions among monetary policy, corruption, and financial development in Nigeria. This framework will help to uncover the complex dynamics and causal relationships, contributing to better policy formulation and implementation for fostering financial development and economic growth in Nigeria

2.5 Summary of the Gap in the Literature Reviewed

The study on the "Impact of Monetary Policy and Corruption on Financial Development in Nigeria" addresses a critical area in finance and development economics, especially given Nigeria's dynamic economic landscape marked by fluctuating monetary policies and systemic corruption. While prior research has explored the relationship between financial development and factors such as monetary policy and corruption, there remain notable gaps in this field, particularly in how these relationships manifest in the Nigerian context with an emphasis on financial depth, access, stability, and efficiency.

Although individual impacts of monetary policy and corruption on financial development have been examined, few studies investigate how these two variables interact to influence financial development. For example, recent studies often overlook how corruption may undermine the effectiveness of monetary policy[143]. This interaction is particularly relevant in Nigeria, where systemic corruption can distort policy objectives and limit access to financial services. This thesis aims to address this by examining how corruption levels might moderate the effects of monetary policy on financial development.

Many studies utilize financial depth or access as standalone proxies for financial development, often neglecting other critical dimensions like stability and efficiency, which are essential for a holistic understanding of financial development. Given that financial stability and efficiency are crucial for sustainable economic growth, this study employs a comprehensive set of indicators financial depth, access, stability, and efficiency to provide a more complete picture of financial development in Nigeria, thus filling a methodological gap in existing research.

Existing studies often neglect the role of the exchange rate as a control variable in examining the link between monetary policy, corruption, and financial development[159]. In a country like Nigeria, where exchange rate volatility significantly impacts the financial sector, controlling for exchange rate variations is crucial for isolating the true effects of monetary policy and corruption on financial development[143,152]. This study fills this gap by incorporating the exchange rate as a control variable to ensure a more robust analysis.

Given the recent changes in Nigeria's monetary and regulatory landscape, especially with global economic disruptions such as the COVID-19 pandemic, there is a need for updated studies covering the period from 2013 to 2023. This timeframe captures the post-recession recovery and the various policy adjustments that occurred in response to both domestic and international pressures. Recent studies, call for an updated analysis that reflects current economic realities[144,146]. This study responds to this call by examining recent data within this period, providing insights into how recent policy changes and corruption levels impact Nigeria's financial development.

In sum, this research contributes to the literature by providing a more comprehensive, multi-dimensional understanding of financial development in Nigeria, assessing the dual impacts of monetary policy and corruption in the context of recent economic changes. It integrates

underexplored variables, methodological improvements, and updated data to offer actionable insights for policymakers, regulators, and stakeholders in Nigeria's financial sector.

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Chapter Three

Methodology

In this chapter, the study's methodology, data sources, and model specifications are expounded upon, with particular emphasis on data analysis techniques, econometrics, and statistical standards.

3.1 Research Design

In this study, an ex-post facto research design was adopted. This research design leverages historical or past data to analyze and make predictions about future trends. It is categorized as quasi-experimental because it investigates how an independent variable, existing before the study, influences a dependent variable. Unlike experimental research, ex-post facto research lacks direct control over the independent variables, as their effects have already transpired and are beyond manipulation. Therefore, conclusions about the relationships between variables are drawn without intervening or altering the independent or dependent variables. This research design is particularly suitable for analyzing the impact of monetary policy measures on financial development over the specified period (2013 to 2023) in Nigeria. The ex post facto design was chosen as it allows the researcher to examine the relationship between variables that have already occurred, without the need for manipulation and that it also aligned with the earlier studies in this area[1].

3.2 Population of the Study

The study's population encompasses the entirety of the Nigerian economy, with a specific focus on monetary policy measures implemented by the Central Bank of Nigeria (CBN), corruption level and their impact on financial development indicators[2].

3.3 Sample and Sampling Techniques

This study adopted a census sampling approach, which involves the use of all available data points within the study period. Since the research relies on secondary macroeconomic data—including

monetary policy indicators, corruption levels from the Corruption Perceptions Index (CPI), financial development metrics, and exchange rate figures—there was no need for random or purposive selection. The dataset comprises annual observations covering a period of eleven years, from 2013 to 2023. Specifically, the study analyzes three indices representing monetary policy and corruption levels, four indicators of financial development (i.e., financial depth, access, efficiency, and stability), and one control variable (exchange rate). This complete enumeration ensures a comprehensive and unbiased analysis of the relationship between corruption and financial development in Nigeria.

3.4 Description of the Research Instrument

In this study, we draw upon a range of reliable and reputable sources to underpin the study with robust data and information. The Central Bank of Nigeria's Statistical Bulletin serves as a primary source for monetary policy-related data. It offers comprehensive insights into policy interest rates, exchange rates, money supply, and other critical monetary variables, allowing to analyze their impact on financial development. The National Bureau of Statistics (NBS) is another indispensable resource. It provides a wealth of economic indicators, including inflation rates and others. These statistics enable us to assess financial development trends in Nigeria and their correlation with monetary policy measures. To gauge the level of financial development in Nigeria, this study utilizes the Global Financial Development Database and the Financial Development Indicators, both provided by the World Bank, offering extensive data on financial institutions, markets, and development metrics[3,4,5]. Additionally, data from the Central Bank of Nigeria (CBN) Statistical Bulletin provide detailed insights into Nigeria's monetary policy, exchange rates, and banking performance from a national perspective[5]. The Corruption Perceptions Index (CPI) from

Transparency International contributes valuable data on public sector corruption, an essential variable for assessing institutional quality[6].

Model Specification

The study aims to explore the influence of monetary policy measures and corruption on financial development in Nigeria, with exchange rate as a control variable. The model can be represented as follows:

Model for Studying Monetary Policy, Corruption, and Financial Development in Nigeria

This model builds upon the previous one, incorporating the new variables and objectives you provided. Here's the breakdown:

Dependent Variables (Financial Development Metrics):

- **Financial Depth (FD):** Measured by indicators like broad money supply to GDP ratio.
- **Financial Access (FA):** Measured by indicators like deposit accounts per capita or adult population with a bank account.
- **Financial Efficiency (FE):** Measured by indicators like cost-to-income ratio, interest rate spread, etc.
- **Financial Stability (FS):** Measured by indicators like capital adequacy ratio, non-performing loan ratio, etc.

Independent Variables (Monetary Policy Indices):

- **Policy Interest Rate (INT):** Central Bank's benchmark interest rate.
- **Money Supply (MS):** Total amount of money circulating in the economy.
- **Inflation Rate (INF):** Rate of increase in prices over time.
- **Corruption Level (CRPT):** Measured by Transparency International's Corruption Perception Index or similar metrics.

Control Variable:

- **Exchange Rate (EX):** Naira exchange rate against a reference currency like USD.

Model Specification

The overall model combines monetary policy indices, corruption, and the exchange rate as predictors of financial development metrics.

General Model Equation:

$FD_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \beta_5 EX_t + \varepsilon_t$

Where:

FD_t: Financial development metrics (can be FD, FA, FE, or FS).

INT_t: Policy interest rate (Monetary policy variable).

MS_t: Money supply (Monetary policy variable).

INF_t: Inflation rate (Monetary policy variable).

$CRPT_t$: Corruption level (Corruption Perception Index or similar).

EX_t: Exchange rate (Control variable, e.g., Naira/USD).

$\beta_0, \beta_1, ..., \beta_5$: Coefficients to be estimated.

ε_t: Error term.

Submodels for Financial Development Metrics

Financial Depth (FD):

$FD_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \beta_5 EX_t + \varepsilon_t$

Financial Access (FA):

$FA_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \beta_5 EX_t + \varepsilon_t$

Financial Efficiency (FE):

$FE_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \beta_5 EX_t + \varepsilon_t$

Financial Stability (FS):

$FS_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \beta_5 EX_t + \varepsilon_t$

1. Influence of Monetary Policy on Financial Development:

We can estimate four separate equations, one for each financial development metric:

- **Financial Depth:**
- $FD_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \varepsilon_t$
- **Financial Access:**
- $FA_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \varepsilon_t$
- **Financial Efficiency:**
- $FE_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \varepsilon_t$
- **Financial Stability:**
- $FS_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \varepsilon_t$

2. Influence of Corruption on Financial Development:

This objective requires a different approach. Corruption might influence the effectiveness of financial development. Here, you could run regressions where the corruption (CRPT)) is second independent variable, and financial development (FD) is an independent variable. However, establishing causality (direction of influence) might be challenging.

- $FD_t = \beta_0 + \beta_1 CRPT_t + \varepsilon_t$

Independent Variable:

- **Corruption Level (CRPT):** Measured by Transparency International's Corruption Perception Index or similar metrics.

Model Equations:

We can estimate four separate equations, one for each financial development metric:

- **Financial Depth:**
- $FD_t = \beta_0 + \beta_1 CRPT_t + \varepsilon_t$
- **Financial Access:**
- $FA_t = \beta_0 + \beta_1 CRPT_t + \varepsilon_t$
- **Financial Efficiency:**
- $FE_t = \beta_0 + \beta_1 CRPT_t + \varepsilon_t$
- **Financial Stability:**
- $FS_t = \beta_0 + \beta_1 CRPT_t + \varepsilon_t$

3. Causal Relationship Exploration:

Exploring the Causal Relationship among Monetary Policy, Corruption, and Financial Development

General Model Equation:

$FD_t = \beta_0 + \beta_1 INT_t + \beta_2 MS_t + \beta_3 INF_t + \beta_4 CRPT_t + \varepsilon_t$

Where:

FD_t: Financial development metrics (FD, FA, FE, FS).

INT_t: Policy interest rate.

MS_t: Money supply.

INF_t: Inflation rate.

$CRPT_t$: Corruption level.

$\beta_0, \beta_1, ..., \beta_4$: Coefficients to be estimated.

ε_t: Error term.

Submodels for Financial Development Metrics:

Financial Depth (FD):

$FD\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \varepsilon\_t$

Financial Access (FA):

$FA\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \varepsilon\_t$

Financial Efficiency (FE):

$FE\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \varepsilon\_t$

Financial Stability (FS):

$FS\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \varepsilon\_t$

4. **Control Variable - Exchange Rate**

Investigating the Role of Exchange Rate as a Control Variable

General Model Equation with Exchange Rate:

$FD\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \beta_5 EX\_t + \varepsilon\_t$

Submodels for Financial Development Metrics with Exchange Rate:

Financial Depth (FD):

$FD\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \beta_5 EX\_t + \varepsilon\_t$

Financial Access (FA):

$FA\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \beta_5 EX\_t + \varepsilon\_t$

Financial Efficiency (FE):

$FE\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \beta_5 EX\_t + \varepsilon\_t$

Financial Stability (FS):

$FS\_t = \beta_0 + \beta_1 INT\_t + \beta_2 MS\_t + \beta_3 INF\_t + \beta_4 CRPT\_t + \beta_5 EX\_t + \varepsilon\_t$

3.5 Reliability of the Research Instrument

The research team conducted diagnostic tests on the statistical model to identify and address any potential issues or challenges. These tests are essential in assuring the robustness and reliability of

the results obtained from the model. Various diagnostic tests, including assessments for heteroscedasticity, autocorrelation, and normality, were applied to confirm that the model adheres to its underlying assumptions. This meticulous examination helped maintain the integrity of the analysis and enhance the trustworthiness of the findings.

3.6 Validity of Research Data

Ensuring the research instrument's validity is essential for a successful study. To achieve this, the researchers assessed the validity and credibility of the data sources. Both the NBS and CBN are esteemed institutions in Nigeria, known for providing reliable and credible data. Also, globally, The International Financial Statistics (IFS) and the Financial Access Survey (FAS), both from the International Monetary Fund (IMF), provide extensive financial data and insights. Additionally, the study utilizes data from Bankscope (2000-2014) and Orbis (2015-2021), managed by Bureau van Dijk (BvD), which offer comprehensive information on banking and financial institutions. The Financial Soundness Indicators Database (fsi.imf.org) from the IMF, and the Debt Securities Statistics (DSS) from the Bank for International Settlements (BIS) are also essential for financial stability and securities data. Furthermore, the Enterprise Surveys from the World Bank contribute valuable data on business environments and firm performance. The research team prioritized utilizing the most current and up-to-date data sources to maintain data accuracy. Additionally, three diagnostic tests were employed to confirm the model's robustness and error-free nature.

Diagnostic Tests

In this study, three diagnostic tests were employed to ensure model robustness and minimize errors. These tests include:

1. Variance Inflation Factor (VIF): Assessing the degree of collinearity among independent variables to prevent incorrect results stemming from high correlations.

2. Breusch-Pagan Test: Detecting heteroskedasticity, this violates the assumption of constant variance in residuals and can lead to erroneous model outcomes.
3. LM Test: Identifying autocorrelation, a violation of the assumption of independence in residuals, this can also result in incorrect model findings.

3.7 Method of Data Collection

This study utilizes secondary data sourced from annual statistical bulletin reports published by the Nigeria Bureau of Statistics (NBS) covering the period from 2013 to 2023. Additionally, data was extracted from the statistical bulletin of the Central Bank of Nigeria (CBN). The International Financial Statistics (IFS) and the Financial Access Survey (FAS), both from the International Monetary Fund (IMF), provide extensive financial data and insights. Furthermore, the Enterprise Surveys from the World Bank contribute valuable data on business environments and firm performance. Rigorous selection and validation of these data sources will be undertaken to guarantee the precision and appropriateness of the information employed in the research. Utilizing secondary data enables the study to tap into a rich and varied dataset, ensuring the delivery of dependable and well-founded insights in response to the research inquiries.

3.8 Method of Data Analysis

This study employed a multi-method approach to investigate the influence of monetary policy on financial development in Nigeria. The analytical framework combined descriptive techniques with various regression methods to uncover both the static and dynamic relationships among variables.

1. **Descriptive Statistics:** Initially, descriptive statistics were utilized to depict the underlying trends in the data. This involved summarizing key characteristics such as central tendencies, variability, and distribution patterns through the use of tables, charts, and graphs. These

descriptive insights provided a foundational understanding of the data before proceeding to more complex analyses.

2. **Ordinary Least Squares (OLS) Regression:** The primary method of analysis was Ordinary Least Squares (OLS) regression, which estimated the relationships between monetary policy indicators and financial development. OLS regression was chosen for its robustness in determining the collective influence of several independent variables on the dependent variable. It also allowed for a thorough examination of model fit through residual analysis, making it a suitable tool for assessing the impact of monetary policy measures in the Nigerian context.
3. **Error Correction Model (ECM):** Recognizing that economic time series data may exhibit both short-run fluctuations and long-run equilibrium relationships, an Error Correction Model (ECM) was incorporated into the analytical process. The ECM framework enabled the study to capture short-term dynamics while simultaneously confirming the existence of a long-term stable relationship between the variables. This dual approach was particularly effective after performing unit root tests and diagnostic checks to confirm the stationarity properties of the data.
4. **Granger Causality Test:** To further understand the directionality of relationships between the variables, the Granger Causality Test was applied. This test assessed whether past values of one variable could be used to forecast changes in another, thereby providing insights into the potential causality among monetary policy variables and financial development.

All analyses were conducted using E-View software, a widely recognized statistical tool in economics and finance research. Prior to executing these methods, the data underwent unit root

and diagnostic testing to ensure the appropriateness of the model specifications. This comprehensive approach facilitated a robust interpretation of the impact of monetary policy on financial development, allowing for nuanced hypothesis testing and detailed insight into both immediate and long-term effects.

Endnotes

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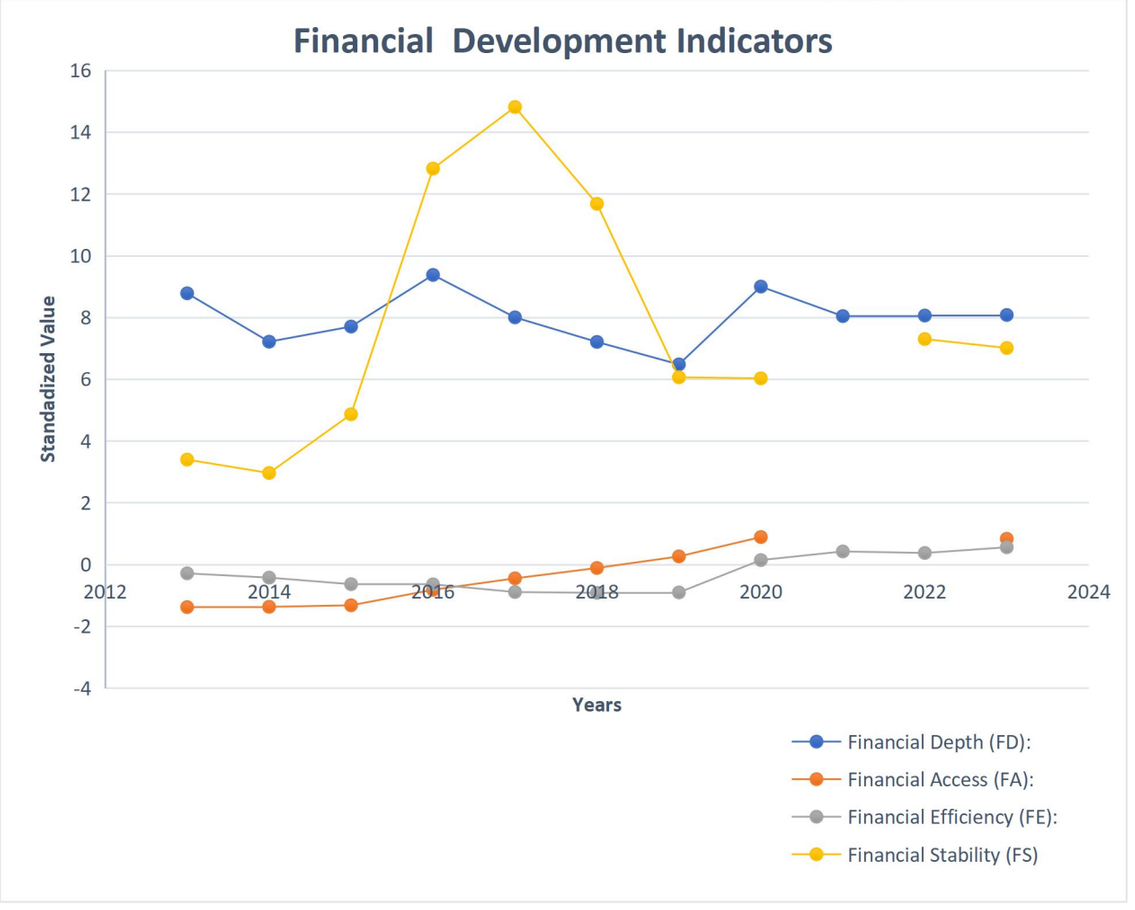
Chapter Four

Results and Discussion of Findings

This chapter presents the results and discussion of findings based on the analysis of secondary data. Aligned with the study's objectives, the findings are structured to address the research questions and test the hypotheses formulated for this research.

4.1.1 Demographic Presentation of Data (Trend Analysis (2013–2023))

Financial Development Metrics: 2013–2023



Financial Depth (FD): Bank lending-deposit spread

The bank lending deposit spread reflects the cost of financial intermediation, with higher spreads indicating higher borrowing costs relative to savings returns. The sharp increase in 2015 suggests a period of tight credit conditions, possibly due to economic uncertainty or restrictive monetary policy. The decline to 2019 (6.48) indicates improved efficiency in the banking sector, likely driven by competitive pressures or policy measures to lower borrowing costs. The stabilization around 8.0 in 2020–2023 suggests a balanced but still elevated intermediation cost, potentially reflecting persistent economic challenges or cautious lending practices post-2020. This trend implies that while the banking sector has become more efficient over time, borrowing costs remain a constraint for economic growth, particularly during periods of high spreads.

Financial Access (FA)

Strong upward trend, nearly doubling from 644.44 (2013) to 1289.81 (2023). Consistent growth in banking access, a slight dip in 2023. The near-doubling of bank accounts per 1,000 adults indicates significant progress in financial inclusion, likely driven by policies promoting access to banking services, digital banking growth, or economic development. This trend suggests that more individuals are integrated into the formal financial system, enabling savings, credit access, and economic participation. The rapid growth from 2013 to 2020 reflects successful financial inclusion initiatives, possibly supported by mobile banking or government programs. The slight dip in 2023 could indicate market saturation, data reporting issues, or economic factors limiting new account openings. Overall, this trend is positive, enhancing economic resilience and supporting broader financial development.

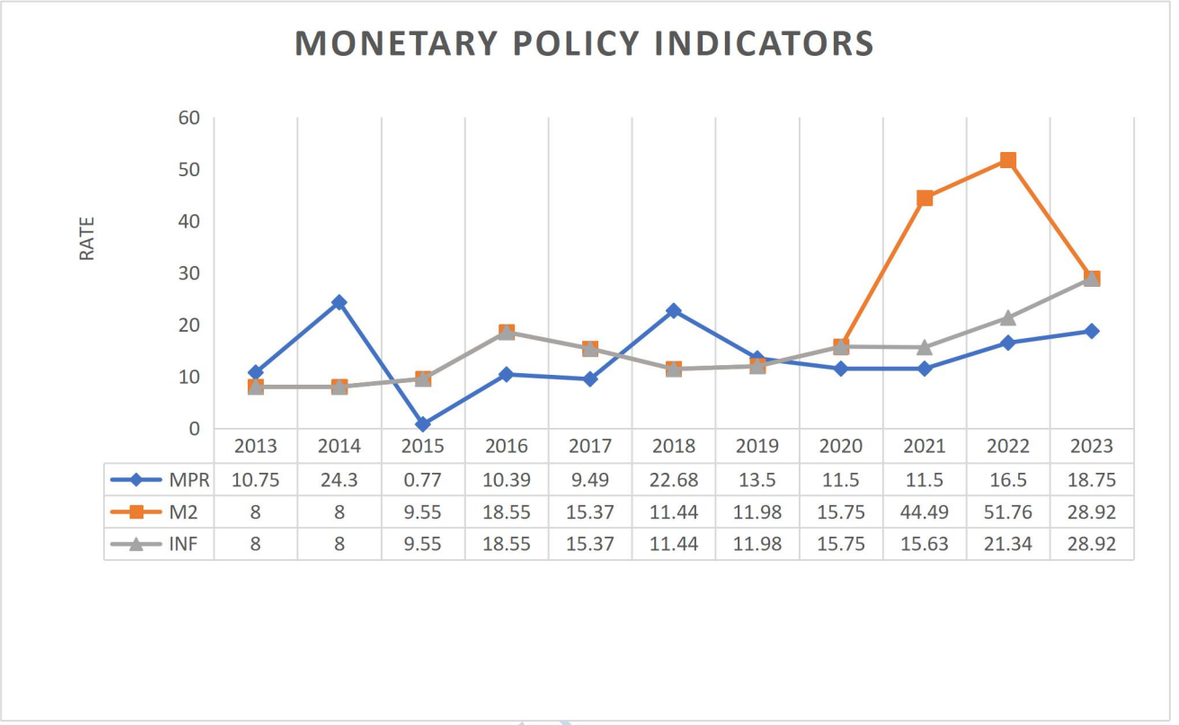
Financial Efficiency (FE)

There is stability at 16–18% in 2013–2019, surged post-2020. The increase in financial system deposits relative to GDP reflects growing financial depth and public confidence in the banking system. The sharp rise from 2010 to 2012 suggests rapid deposit mobilization, possibly due to economic growth or policy incentives encouraging savings. The stability at 16–18% during 2013–2019 indicates a period of consolidation, where the financial system maintained its role in the economy. The surge post-2020 to 22.41% likely reflects increased savings during economic uncertainty (e.g., post-COVID recovery) or policies promoting deposit growth. This trend suggests a strengthening financial system capable of supporting investment and economic activity, though it may also indicate precautionary savings amid economic volatility.

Financial Stability (FS) Trend:

There is a volatile low at 2.96% (2014), stabilizing around 6–7% recently. The sharp decline from 2013 to 2014, peak in 2017 (14.81%), and moderate levels in 2020–2023. Non-performing loans (NPLs) indicate banking sector health, with higher ratios signalling credit risk. The high NPL ratio in 2011 (22.6%) suggests significant financial stress, possibly due to economic downturn or poor lending practices. The decline to 2.96% by 2014 reflects improved loan quality, likely from better risk management or economic recovery. The spike to 14.81% in 2017 indicates renewed stress, possibly tied to economic shocks or currency depreciation (noted in EXR trends). The stabilization at 6–7% in 2020–2023 suggests a moderately healthy banking sector, though still vulnerable to economic fluctuations. This trend implies ongoing challenges in maintaining loan quality, requiring robust regulatory oversight to ensure financial stability.

Monetary Policy Variables



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
MPR	10.75	24.3	0.77	10.39	9.49	22.68	13.5	11.5	11.5	16.5	18.75
M2	8	8	9.55	18.55	15.37	11.44	11.98	15.75	44.49	51.76	28.92
INF	8	8	9.55	18.55	15.37	11.44	11.98	15.75	15.63	21.34	28.92

Monetary Policy Rate (MPR)

There is Highly volatile, with peaks at 24.3% (2014) and 22.68% (2018), rising to 18.75% (2023). Sharp drop to 0.77% in 2015, the recent upward trend from 2021. 2014 peak, 2015 trough, 2021–2023 tightening. The MPR reflects the central bank's efforts to manage inflation and economic growth. High rates in 2014 and 2018 indicate tight monetary policy to curb inflation or stabilize the currency (aligned with EXR increases). The sharp drop to 0.77% in 2015 suggests an aggressive easing to stimulate growth, possibly in response to the economic slowdown. The recent rise to 18.75% by 2023 reflects renewed tightening, likely to combat rising inflation (28.92% in 2023). This volatility suggests a reactive monetary policy environment, balancing growth and

inflation control. High MPRs increase borrowing costs, potentially slowing investment but necessary to address inflationary pressures.

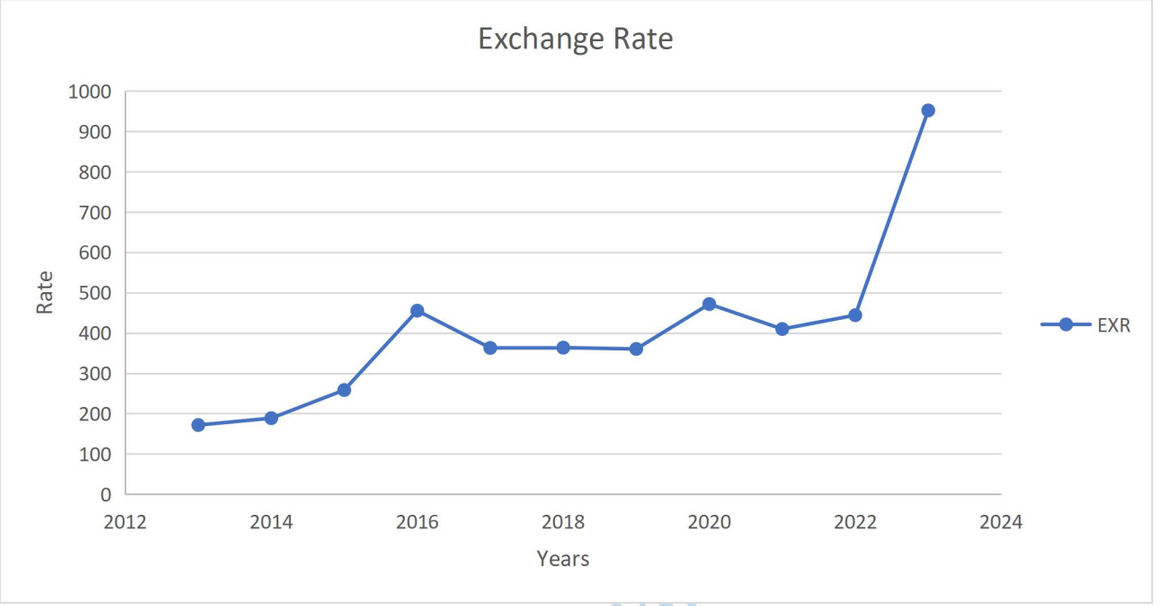
Money Supply (M2)

Consistent exponential growth, from 11.53M (2013) to 78.83M (2023). Nearly quadrupled since 2016, with ~15.9% annual growth. 2016–2023 accelerated growth. The exponential growth in M2 reflects significant monetary expansion, likely driven by central bank policies to support economic growth or finance deficits. The accelerated growth post-2016 aligns with rising inflation and currency depreciation, suggesting that increased liquidity may be fueling price pressures. While this expansion supports economic activity and credit availability, it risks overheating the economy and exacerbating inflation, as seen in 2023 (28.92%). The trend indicates a policy preference for growth stimulation but highlights the need for careful management to avoid inflationary spirals or asset bubbles.

Inflation Rate (INF)

Volatile, peaking at 18.55% (2016) and 28.92% (2023). Stable at 8–12% in 2010–2015, sharp rises in 2016 and 2022–2023. 2016 and 2023 inflation spikes. High and volatile inflation reflects significant price pressures, reducing purchasing power and increasing economic uncertainty. The stability at 8–12% in 2010–2015 suggests controlled inflation during a period of relative economic stability. The 2016 spike (18.55%) aligns with currency depreciation (EXR to 455.26), indicating imported inflation or supply shocks. The sharp rise to 28.92% in 2023, coupled with EXR reaching 952.14, points to a severe inflationary environment, likely driven by currency weakness, supply chain issues, or demand pressures from M2 growth. This trend challenges policymakers to balance growth and price stability, impacting living standards and investment.

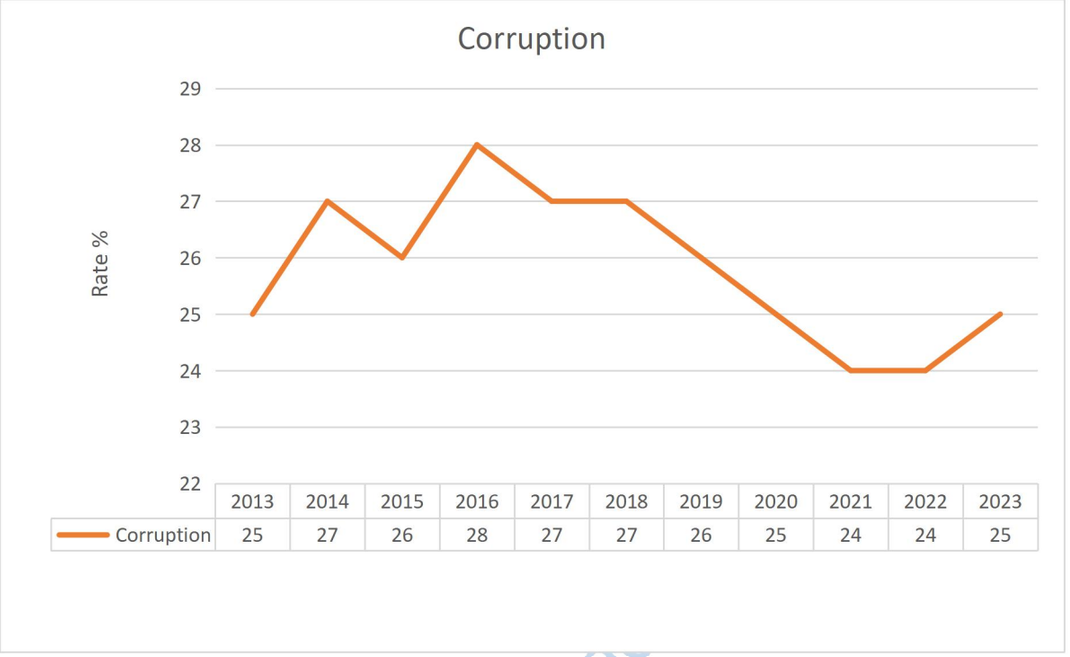
Exchange Rate Trends



Exchange Rate (EXR)

Strong upward trend (depreciation), from 154.57 (213) to 952.14 (2023). Sharp rises in 2015–2016 and 2020–2023, stable at ~360 in 2017–2019. 2016 and 2023 depreciation spikes. The consistent rise in EXR indicates significant currency depreciation, making imports more expensive and increasing export competitiveness. The sharp spikes in 2016 (to 455.26) and 2023 (to 952.14) suggest external pressures, such as global economic shifts, commodity price fluctuations, or capital outflows. The stable period (2017–2019) around 360 indicates temporary currency management success, possibly via central bank interventions. The severe depreciation in 2020–2023, alongside high inflation (INF), suggests a macroeconomic crisis, increasing costs of living and imported goods. This trend poses challenges for economic stability, requiring coordinated fiscal and monetary policies to mitigate impacts.

Corruption Trends



Corruption Level

There is a Stable, a slight decline from 28 (2016) to 24–25 (2020–2023. In 2016 it reaches peak, 2020–2023 slight improvement. The stable corruption level, with a slight decline post-2020, suggests modest improvements in governance or public perception of corruption. The peak at 28 in 2016 indicates a period of heightened corruption concerns, possibly tied to economic stress (e.g., high EXR and INF). The decline to 24–25 suggests anti-corruption efforts or improved institutional transparency, though levels remain relatively high. Lower corruption enhances economic efficiency and investor confidence, but persistently high levels may deter foreign investment and hinder financial development.

The trends collectively depict an economy navigating significant challenges:

Financial Sector: Improved access (FA) and efficiency (FE) indicate a maturing financial system, but volatile stability (FS) and intermediation costs (FD) suggest ongoing risks.

Monetary Policy: Volatile MPR and exponential M2 growth reflect aggressive policy responses to economic conditions, but they contribute to currency depreciation (EXR) and inflation (INF).

Economic Environment: The sharp rise in EXR (471.62 to 952.14) and INF (15.63% to 28.92%) from 2020–2023, as noted in the interesting fact, highlights a critical macroeconomic challenge. This correlation likely stems from currency depreciation driving up import costs, fueling inflation, and necessitating tighter MPR, which further pressures borrowing and growth.

Governance: Slight improvements in corruption levels support financial development but remain a constraint.

4.1.2 Presentation of Diagnostic Tests

Table 4.1 Unit Root Test

Variable Name	T-Statistic	P-Value	Level of Stationarity
Financial Development (Access)	-4.968997	0.0032	I(1)
Financial Development (Depth)	-3.811953	0.0183	I(0)
Financial Development (Efficiency)	-3.915653	0.0128	I(0)
Financial Development (Stability)	-4.725604	0.0045	I(0)
Monetary Policy Rate	-4.022066	0.0106	I(0)
Money Supply	-6.098532	0.0007	I(1)
Inflation	-3.806947	0.0232	I(1)
Exchange Rate	-3.637716	0.0241	I(1)
Corruption	-16.70418	0.0000	I(1)

Source: Field Result, 2024

The table 4.1 above shows the results of the unit root test show that several variables exhibit stationarity at different levels of differencing. Financial Development (Access) is stationary at the first difference, denoted as I(1), with a t-statistic of -4.969 and a P-value of 0.0032. This suggests that the variable requires differencing once to achieve stationarity. Financial Development (Depth), Financial Development (Efficiency), Financial Development (Stability), and Monetary Policy Rate are stationary at their levels, denoted as I(0). Specifically, Financial Development (Depth) has a t-statistic of -3.812 (P = 0.0183), Financial Development (Efficiency) has a t-statistic of -3.916 (P = 0.0128), Financial Development (Stability) has a t-statistic of -4.726 (P = 0.0045), and Monetary Policy Rate shows a t-statistic of -4.022 (P = 0.0106). These results indicate that these variables are already stationary at their levels and do not require differencing.

On the other hand, Money Supply, Inflation, Exchange Rate, and Corruption are stationary at the first difference (I(1)). Money Supply shows a t-statistic of -6.099 (P = 0.0007), Inflation has a t-statistic of -3.807 (P = 0.0232), and Exchange Rate shows a t-statistic of -3.638 (P = 0.0241), all indicating that these variables need differencing to become stationary. Corruption has a very strong result with a t-statistic of -16.704 (P = 0.0000), which also indicates that it is stationary at the first difference. These findings reveal the different levels of stationarity across the variables, with some requiring differencing and others being stationary at their levels.

Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) analysis for the included variables are presented. The VIF values are calculated to assess the degree of multicollinearity among the variables, where a value greater than 1 indicates that there is a potential problem with multicollinearity.

Table 4.2 Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	10.5220	429.3302	NA
Financial Development (Access)	0.17950	17.14591	1.114842
Financial Development (Depth)	0.41248	41.46309	1.900910
Financial Development (Efficiency)	0.16427	3.211395	1.607561
Financial Development (Stability)	0.24970	9.07038	2.672992
Monetary Policy Rate	0.37919	3.11702	1.989234
Money Supply	0.16427	3.21395	1.267561
Inflation	0.19900	29.2308	2.269927
Exchange Rate	0.22249	6.67024	1.989234

Source: Field Result, 2024

Table 4.2 presents the Variance Inflation Factors (VIF) for the regression model's variables, which measure multicollinearity. The uncentered VIF values are notably high, with financial development (depth) at 41.46 and inflation at 29.23, indicating potential multicollinearity. The constant (C) shows an especially high uncentered VIF of 429.33, though this is less relevant for assessing individual predictors. Centered VIF values, which more accurately assess multicollinearity in individual predictors, are generally below the critical threshold of 10. Financial development (stability) has the highest centered VIF at 2.67, followed by inflation at 2.27, both well within acceptable limits. Other variables, such as financial development (access) and monetary policy rate, have centered VIFs of 1.11 and 1.99, respectively, indicating low multicollinearity risks. Overall, the centered VIFs suggest that multicollinearity is not a significant concern, supporting the reliability of the model's estimates.

Heteroskedasticity Test of Breusch-Pagan test

The Breusch-Pagan-Godfrey test for heteroskedasticity. The null hypothesis of the test is homoskedasticity, which means that the variance of the errors is constant across observations. The alternative hypothesis is heteroskedasticity, which means that the variance of the errors is not constant across observations.

4.3 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	4.567710	Prob. F	0.169
Obs*R-squared	3.22100	Prob. Chi-Square(6)	0.185
Scaled explained SS	16.3311	Prob. Chi-Square(6)	0.034

Source: Field Result, 2024

Table 4.3 displays the results of the Breusch-Pagan-Godfrey heteroskedasticity test. The F-statistic of 4.5677, with a probability (Prob. F) of 0.169, and the Obs*R-squared value of 3.221 with a Chi-Square probability of 0.185, both indicate that heteroskedasticity is not present at conventional significance levels, as these p-values are above 0.05. However, the scaled explained sum of squares (SS) statistic is 16.3311, with a Prob. Chi-Square of 0.034, slightly below the 0.05 threshold. This suggests some evidence of heteroskedasticity, though it may be minimal, as the other indicators do not support strong heteroskedasticity. Overall, the model is likely robust to heteroskedasticity but may require further testing or adjustments if precision is critical.

4.2 Presentation of Descriptive Analysis

Table 4.4 Descriptive Statistics Result

Statistics	Financial Development (Access)	Financial Development (Depth)	Financial Development (Efficiency)	Financial Development (Stability)	Monetary Policy Rate	Money Supply	Inflation	Corruption	Exchange Rate
Mean	1.914768	2.064279	2.827076	1.902792	2.432867	17.04455	2.586069	22.21429	5.719109
Median	1.911700	2.085495	2.882063	1.832999	2.458602	16.98791	2.484073	25.50000	5.890366
Maximum	1.971032	2.260025	3.109707	3.117950	3.190476	18.18282	3.364533	28.00000	6.858711
Minimum	1.866927	1.707774	2.039273	1.085033	0.261365	16.26008	2.079442	0.000000	5.040647
Std. Dev.	0.043508	0.148133	0.294392	0.614744	0.703960	0.551330	0.368313	9.488281	0.542697
Skewness	0.143722	-0.925985	-1.653232	0.451969	-2.132475	0.516884	0.493932	-1.972529	0.295036
Kurtosis	1.317530	3.543245	4.985991	2.236113	7.723415	2.455770	2.615820	5.017103	2.371058
Jarque-Bera	1.699441	2.172861	8.678173	0.817033	23.62526	0.796170	0.655357	11.45211	0.433857
Probability	0.427534	0.337419	0.013048	0.664636	0.000007	0.671605	0.720595	0.003260	0.804988
Sum	26.80676	28.89991	39.57907	26.63908	34.06013	238.6238	36.20497	311.0000	80.06753
Sum Sq. Dev.	0.024608	0.285265	1.126667	4.912830	6.442270	3.951546	1.763505	1170.357	3.828759
Observations	11	11	11	11	11	11	11	11	11

Source: Field Result, 2024

Table 4.4 provides descriptive statistics for various variables, including Financial Development (Access), Financial Development (Depth), Financial Development (Efficiency), Financial Development (Stability), Monetary Policy Rate, Money Supply, Inflation, Corruption, and Exchange Rate. For Financial Development (Access), the mean value is 1.915, with a median close to it at 1.912, indicating a fairly symmetric distribution. The maximum observed value is 1.971, and the minimum is 1.867. The standard deviation (0.044) is quite low, showing limited variation in this variable. The positive skewness (0.144) suggests a slight rightward distribution, meaning that most values are concentrated on the lower end, with a few higher values stretching the tail. The kurtosis of 1.318 is below 3, indicating a relatively flat distribution compared to a normal distribution. The Jarque-Bera test, with a probability of 0.428, suggests that the data does not significantly deviate from normality.

Financial Development (Depth) has a higher standard deviation (0.148) and a more negative skewness (-0.926), indicating a distribution that is skewed to the left, where most values are concentrated on the higher end. The kurtosis value of 3.543 is higher than 3, suggesting a relatively peaked distribution. The Jarque-Bera test yields a probability of 0.337, indicating no significant departure from normality.

Financial Development (Efficiency) shows a much wider variation, with a high standard deviation of 0.294. The negative skewness (-1.653) suggests a distribution with a long left tail, meaning there are more values below the mean than above it. The kurtosis value of 4.986, much higher than 3, implies a very peaked distribution with heavy tails. The Jarque-Bera test has a significant probability of 0.013, indicating a departure from normality.

For Financial Development (Stability), the standard deviation (0.615) is the highest among the financial development variables, indicating more variation. The positive skewness (0.452) and

kurtosis of 2.236 reflect a distribution that is moderately right-skewed with a somewhat flat shape. The Jarque-Bera test's probability of 0.665 shows no significant deviation from normality.

The Monetary Policy Rate has a mean of 2.433, with a maximum value of 3.190 and a minimum of 0.261, indicating variability in the rate across observations. The high standard deviation (0.704) reflects a wide spread in the data. The negative skewness (-2.132) shows a leftward tail, with more values concentrated on the right. The high kurtosis value of 7.723 suggests a highly peaked distribution with heavy tails. The Jarque-Bera test's probability of 0.000007 strongly rejects the normality assumption.

Money Supply shows a mean of 17.045, with a standard deviation of 0.551, reflecting moderate variability. The positive skewness (0.517) indicates that the data is slightly right-skewed. The kurtosis (2.456) suggests a relatively normal distribution with mild tails. The Jarque-Bera test probability of 0.672 indicates no significant deviation from normality.

Inflation has a mean of 2.586, with a standard deviation of 0.368. The positive skewness (0.494) suggests a slight rightward skew. The kurtosis (2.616) indicates a near-normal distribution. The probability of 0.721 from the Jarque-Bera test shows that the data is not significantly different from a normal distribution.

Corruption has a very high mean of 22.214, with a large standard deviation (9.488), reflecting significant variability in the corruption variable. The negative skewness (-1.973) and the high kurtosis value of 5.017 suggest a distribution with a long-left tail and heavy peaks. The Jarque-Bera test with a probability of 0.00326 indicates that the data significantly deviates from normality.

Lastly, the Exchange Rate shows a mean of 5.719 with a standard deviation of 0.543. The positive skewness (0.295) suggests a mild rightward skew, and the kurtosis of 2.371 reflects a moderately

normal distribution. The Jarque-Bera test probability of 0.805 suggests no significant departure from normality.

4.3 Correlation Matrix

The strength and direction of a relationship between two variables can be assessed using statistical correlation. A correlation matrix is a table that displays the correlation coefficients between pairs of variables, allowing for the identification of patterns or associations within the dataset. This tool is valuable for understanding the relationships between different variables. A correlation value close to +1 indicates a strong positive relationship, while a value near -1 reflects a strong negative relationship. A value of 0 suggests no linear relationship between the variables. Table 4.5 presents the correlations between Monetary policy, corruption and Financial development in Nigeria.

Table 4.5 Correlations Between Monetary Policy, Corruption and Financial Development

Correlation	L_AC	L_DT	L_EFF	L_ST	L_MPR	L_M2	L_INF	CORRUPTION	L_EXR
L_AC	1.000000								
Probability	-----								
L_DT	0.013470	1.000000							
Probability	0.9635	-----							
L_EFF	0.507980	0.452492	1.000000						
Probability	0.0637	0.1043	-----						
L_ST	0.244530	0.449260	-0.108137	1.000000					
Probability	0.3995	0.1071	0.7129	-----					
L_MPR	0.313714	0.053203	0.122489	0.163060	1.000000				
Probability	0.2747	0.8567	0.6766	0.5775	-----				
L_M2	0.900616	0.158079	0.719110	0.152192	0.256666	1.000000			
Probability	0.0000	0.5894	0.0037	0.6035	0.3757	-----			
L_INF	0.751080	0.187956	0.372851	0.342204	0.210430	0.796856	1.000000		
Probability	0.0020	0.5199	0.1892	0.2311	0.4702	0.0006	-----		
CORRUPTION	0.314376	0.223069	0.863262	-0.159004	0.011472	0.478501	0.176308	1.000000	
Probability	0.2737	0.4433	0.0001	0.5872	0.9690	0.0835	0.5466	-----	
L_EXR	0.860084	0.179588	0.600227	0.329562	0.169423	0.928228	0.845982	0.470894	1.000000
Probability	0.0001	0.5390	0.0232	0.2499	0.5626	0.0000	0.0001	0.0892	-----

Key: *L_AC: Financial Development Access, L_DT: Financial Development Depth, L_EFF: Financial Development Efficiency, L_ST: Financial Development Stability, L_MPR: Monetary Policy Rate, L_M2: Money Supply, L_INF: Inflation, L_CORRUPTION: Corruption, L_EXR: Exchange Rate*

Source: Field Result, 2024

The table 4.5 above correlation analysis reveals several key relationships between the variables under consideration. Financial Development (Access) shows a very strong positive correlation with Money Supply (r = 0.901, p = 0.0000), indicating that greater financial access is closely associated with increased money supply. It also exhibits a moderate positive relationship with Financial Development (Efficiency) (r = 0.508, p = 0.0637), though the statistical significance is borderline. Financial access is also positively correlated with Inflation (r = 0.751, p = 0.0020) and Exchange Rate (r = 0.860, p = 0.0001), suggesting that improvements in financial access tend to coincide with higher inflation and exchange rates. On the other hand, Financial Development (Access) has weak or no significant correlations with Financial Development (Depth), Financial Development (Stability), and Corruption.

Financial Development (Depth) shows a very weak and statistically insignificant relationship with most variables, including Financial Development (Efficiency), Financial Development (Stability), Money Supply, and Inflation. A moderate positive correlation is observed with Financial Development (Efficiency) (r = 0.452, p = 0.1043), but this is not statistically significant. The correlation with Corruption is weak and insignificant, with a correlation coefficient of 0.223 (p = 0.4433). Financial Development (Depth) also exhibits weak or insignificant correlations with Exchange Rate.

The most noteworthy correlation in the matrix is between Financial Development (Efficiency) and Corruption (r = 0.863, p = 0.0001), suggesting a very strong positive association, meaning that as financial efficiency improves, corruption tends to increase. Financial Development (Efficiency) is also positively correlated with Exchange Rate (r = 0.600, p = 0.0232) and Money Supply (r = 0.719, p = 0.0037), indicating that more efficient financial systems are related to higher exchange rates and money supply.

Among other variables, Money Supply shows strong positive correlations with both Inflation ($r = 0.797$, $p = 0.0006$) and Exchange Rate ($r = 0.928$, $p = 0.0000$), pointing to a strong association between the availability of money in the economy and both inflationary pressures and exchange rate fluctuations. Inflation is strongly correlated with Exchange Rate ($r = 0.846$, $p = 0.0001$), further underlining the interconnectedness between inflation and exchange rates in this context.

Thus, reveals that Financial Development (Access) and Financial Development (Efficiency) are strongly related to Money Supply, Inflation, and Exchange Rates, with particularly strong relationships observed between Financial Development (Access) and Money Supply, and Financial Development (Efficiency) and Corruption. Conversely, Financial Development (Depth) and Financial Development (Stability) exhibit weak or insignificant correlations across the variables, suggesting that other factors may influence these aspects of financial development more strongly.

4.4 Testing of Hypotheses

Hypothesis One:

H_01: There is no significant relationship between monetary policy and financial development in Nigeria.

Table 4.6 The Relationship between Monetary Policy and Financial Development in Nigeria.

Variable	Financial Development (Access)	Financial Development (Depth)	Financial Development (Efficiency)	Financial Development (Stability)
	Coefficient (Prob.)	Coefficient (Prob.)	Coefficient (Prob.)	Coefficient (Prob.)
Monetary Policy Rate	0.006978	-0.106928	-0.029679	0.131798
	(0.1706)	(0.0837)	(0.5799)	(0.5743)
Monetary Policy Rate (-1)		-0.133724		
		(0.0610)		
Money Supply	-0.103726	0.747138	0.729021	-2.418061
	(0.0349)	(0.1122)	(0.1418)	(0.0242)
Money Supply (-1)	0.076719	-0.669679	-0.566936	
	(0.0922)	(0.1232)	(0.2645)	
Inflation	0.009039	0.074440	0.240627	1.305780
	(0.5836)	(0.6709)	(0.3051)	(0.1956)
Inflation (-1)	-0.025966	0.270747		0.792304
	(0.1281)	(0.1175)		(0.3699)
Exchange Rate	0.044787	-0.314435	-0.364444	0.590921
	(0.0282)	(0.1003)	(0.1074)	(0.5451)
Constant (C)	0.224202	2.632566	-0.074893	28.48619
	(0.2625)	(0.2222)	(0.9773)	(0.0247)
R-squared	0.984073	0.847011	0.829314	0.738356
Adjusted R-squared	0.961776	0.541032	0.658628	0.372055
S.E. of regression	0.008615	0.075337	0.114181	0.480728
Sum squared resid	0.000371	0.022703	0.078224	1.155497
Log likelihood	49.57058	22.83029	14.78912	-2.713481
F-statistic	44.13374	2.768199	4.858704	2.015708
Prob(F-statistic)	0.000338	0.170323	0.037865	0.228833
Durbin-Watson stat	2.003104	2.002882	1.868934	1.764240

Source: Field Result, 2024

The results presented in Table 4.6 provide an in-depth analysis of the relationship between key monetary policy variables namely, the Monetary Policy Rate, Money Supply, Inflation, and Exchange Rate and four dimensions of financial development in Nigeria: Access, Depth, Efficiency, and Stability. Below is a detailed interpretation of these findings.

The Monetary Policy Rate shows a positive coefficient (0.006978); however, its p-value (0.1706) indicates that this effect is statistically insignificant. This suggests that changes in the monetary policy rate do not have a meaningful impact on financial access in Nigeria. Conversely, Money Supply has a significant negative impact (coefficient = -0.103726, p = 0.0349), implying that an increase in the money supply reduces access to financial services. This finding could indicate that expanding the money supply may trigger inflationary pressures or lead to resource misallocation, thereby hindering efficient access. Additionally, the Exchange Rate has a positive and significant effect (coefficient = 0.044787, p = 0.0282), implying that a depreciation of the local currency improves financial access, possibly due to increased foreign investment and better competitiveness in the financial markets. Inflation, however, does not show a significant impact (p = 0.5836), suggesting that inflationary changes do not influence this dimension of financial development. The model's fit is strong (R-squared = 0.984), explaining 98.4% of the variance in financial access, although the Adjusted R-squared (0.9618) indicates a slight reduction in explanatory power due to model complexity.

The analysis reveals a significant negative effect of the Monetary Policy Rate in its lagged form (coefficient = -0.133724, p = 0.0610), suggesting that past restrictive monetary policies tend to reduce financial depth, likely by limiting credit availability and constraining investments. Although Money Supply exhibits a positive coefficient (0.747138), it is not statistically significant (p = 0.1122), indicating only a potential, but unconfirmed, positive relationship where increased

liquidity might enhance market depth. The Exchange Rate's negative coefficient (coefficient = -0.314435, p = 0.1003) suggests that an appreciating local currency could reduce financial depth, possibly due to decreased foreign investment and lower export competitiveness. Both current and lagged Inflation show insignificant effects, implying that inflation does not play a significant role in determining financial depth. The model fit (R-squared = 0.847) is good, but the Adjusted R-squared (0.541) reflects the inclusion of some irrelevant variables, reducing the model's explanatory power.

For financial efficiency, the Monetary Policy Rate has an insignificant negative effect (coefficient = -0.029679, p = 0.5799), indicating no strong direct influence of interest rate adjustments on efficiency. Money Supply has a positive coefficient (0.729021), though not statistically significant (p = 0.1418), suggesting a potential positive relationship where increased liquidity might enhance financial efficiency. The Exchange Rate negatively impacts efficiency (coefficient = -0.364444), with a marginally significant p-value (0.1074), suggesting that an appreciating currency might reduce efficiency, potentially due to decreased export revenue and limited capital flows. Inflation, in both its current and lagged forms, does not show significant effects, indicating that it is not a major determinant of financial efficiency. The model shows a strong fit (R-squared = 0.829), but the Adjusted R-squared (0.659) indicates a moderate decline in explanatory power when accounting for the number of predictors.

The Monetary Policy Rate has an insignificant positive coefficient (0.131798, p = 0.5743), indicating that changes in the policy rate do not significantly affect financial stability. However, Money Supply exerts a significant negative impact (coefficient = -2.418061, p = 0.0242), suggesting that an increase in money supply reduces stability, likely due to its inflationary effects, which can heighten financial system volatility. The Exchange Rate shows a positive but

insignificant effect (coefficient = 0.590921, p = 0.5451), implying that currency fluctuations do not have a meaningful direct impact on financial stability. Inflation, both in current and lagged terms, does not significantly influence financial stability, indicating that inflationary pressures may not be destabilizing the financial system directly. The model's explanatory power is lower (R-squared = 0.738), with the Adjusted R-squared dropping significantly (0.372), highlighting the possibility of non-contributing predictors within the model.

The F-statistics reveal that only the models for Financial Development (Access) and Financial Development (Efficiency) are statistically significant ($p < 0.05$), suggesting strong explanatory power. In contrast, the models for Financial Development (Depth) and Stability are not statistically significant, indicating weaker specifications for these dimensions.

The analysis highlights the complex role of Money Supply, significantly affecting both Financial Access and Stability. The Monetary Policy Rate appears influential mainly in its lagged form for Financial Depth but shows limited direct effects otherwise. The Exchange Rate presents mixed outcomes, positively affecting Access while negatively impacting Efficiency and Depth. Lastly, Inflation seems to have a negligible direct impact across all dimensions of financial development.

Table 4.7 Error Correction Model (ECM) Diagnostic Tests of Short and Long Run Effect of Monetary Policy on Financial Development

Variable	Financial Development (Access)	Financial Development (Depth)	Financial Development (Efficiency)	Financial Development (Stability)
	Coefficient (Prob.)	Coefficient (Prob.)	Coefficient (Prob.)	Coefficient (Prob.)
C	0.224 (0.0041)	2.633 (0.0002)	4.569 (0.0026)	-
Money Supply	-0.104 (0.0065)	0.747 (0.0129)	0.352 (0.2738)	-
Monetary Policy Rate	-	-0.107 (0.0031)	0.021 (0.4915)	-
Inflation	0.009 (0.3228)	0.074 (0.2987)	-	1.306 (0.0486)
CointEq(-1)	0.012 (0.0051)	-1.215 (0.0002)	-0.324 (0.0027)	-1.445 (0.0006)
R-squared	0.792	0.960	0.738	0.865
Adjusted R-squared	0.723	0.940	0.651	0.838
F-statistic (Prob.)	11.443 (0.0020)	47.624 (0.0000)	8.453 (0.0055)	-
Durbin-Watson Stat	3.143	2.223	1.763	1.764
F-Bounds Test	2.506	17.966	4.005	4.925
t-Bounds Test	4.749	-13.404	-4.902	-7.687

Source: Field Result, 2024

The table 4.7 further assesses the Error Correction Model (ECM) Diagnostic Tests of Short and Long Run Effect of Monetary Policy on different aspects of financial development in Nigeria, covering Financial Development (Access), Financial Development (Depth), Financial Development (Efficiency), and Financial Development (Stability). The results provide insight into the relationships between monetary policy variables and these financial development indicators.

For Financial Development (Access), the constant term (C) is significant (coefficient = 0.224, p = 0.0041), suggesting a positive baseline level of financial access. Money Supply has a significant negative effect (coefficient = -0.104, p = 0.0065), indicating that increases in Money Supply are associated with decreases in Financial Development (Access). This aligns with the previous

findings, further underscoring the negative impact of expansive monetary conditions on financial access.

In the case of Financial Development (Depth), both the constant term (C) and Money Supply are statistically significant, with coefficients of 2.633 ($p = 0.0002$) and 0.747 ($p = 0.0129$), respectively. This positive relationship suggests that Money Supply expansion enhances the depth of financial services. However, the Monetary Policy Rate (D(L_MPR)) shows a significant negative effect (coefficient = -0.107, $p = 0.0031$), indicating that tighter monetary policy may reduce financial depth.

For Financial Development (Efficiency), the constant term (C) remains significant (coefficient = 4.569, $p = 0.0026$), indicating an overall high level of financial efficiency. However, Money Supply and Monetary Policy Rate do not show significant effects, suggesting weaker relationships with financial efficiency in this context.

Regarding Financial Development (Stability), the Inflation variable demonstrates a significant positive impact (coefficient = 1.306, $p = 0.0486$), suggesting that rising inflation may enhance perceived stability in the financial sector, possibly due to adjustments in financial policies and interest rates.

The Cointegrating Equation (CointEq(-1)) is significant across all financial development indicators, indicating a strong error correction mechanism. This suggests that deviations from the long-term equilibrium are adjusted over time, with coefficients indicating the speed of adjustment.

The model diagnostics reveal high R-squared values for Financial Development (Depth) (R-squared = 0.960) and Financial Development (Stability) (R-squared = 0.865), indicating strong explanatory power. The adjusted R-squared values are also high, demonstrating robust model fit. The F-statistics for these models are significant (e.g., $F = 47.624$, $p = 0.0000$ for Depth),

confirming the overall significance of the models. The Durbin-Watson statistics indicate the absence of strong autocorrelation, and the F-Bounds and t-Bounds tests confirm cointegration among the variables, suggesting a stable long-term relationship.

Monetary policy variables exert varied impacts on financial development in Nigeria. While increases in Money Supply are linked to reduced financial access, they enhance financial depth, indicating a trade-off between access and service expansion. Tighter Monetary Policy Rates appear to limit financial depth but do not significantly affect efficiency, suggesting a more nuanced role in shaping financial structures. Inflation contributes positively to financial stability, potentially due to adaptive financial policies. Overall, the significant error correction mechanism and robust model diagnostics affirm the models' strong explanatory power and highlight the dynamic interplay between monetary policy and financial development indicators.

The null hypothesis H01 that there is no significant relationship between monetary policy and financial development in Nigeria) is rejected for all dimensions of financial development (Access, Depth, Efficiency, and Stability). The Error Correction Model (ECM) results in Tables 4.6 and 4.7 demonstrate significant short-run and/or long-run relationships between monetary policy variables and financial development. The high R-squared values (ranging from 0.738 to 0.984) and significant F-statistics in both tables provide robust evidence supporting the rejection of the null hypothesis.

Hypothesis Two:

$H_0$2: Corruption level has no significant effect on financial development in Nigeria.

Table 4.8 The Influence of Corruption Level on Financial Development in Nigeria

Variable	Financial Development (Access) (Prob.)	Financial Development (Depth) (Prob.)	Financial Development (Efficiency) (Prob.)	Financial Development (Stability) (Prob.)
Financial Development (DV) (-1)	0.988057 (0.0000)	0.005949 (0.9838)	0.860848 (0.0014)	0.588927 (0.0506)
Corruption	0.000769 (0.1346)	-0.007057 (0.2683)	0.009311 (0.0821)	-0.099974 (0.0079)
Corruption (-1)			-0.016808 (0.0098)	0.043408 (0.0451)
Constant (C)	0.011260 (0.9435)	2.248268 (0.0011)	0.619732 (0.1584)	2.273144 (0.0026)
R-squared	0.939389	0.209160	0.860263	0.575654
Adjusted R-squared	0.927267	0.050992	0.813684	0.434205
S.E. of Regression	0.011883	0.108330	0.084354	0.456319
AIC	-5.828234	-1.408087	-1.859931	1.516409
Sum of Squared Residuals	0.001412	0.117355	0.064040	1.874041
Schwarz Criterion	-5.697861	-1.277714	-1.686101	1.690240
Log Likelihood	40.88352	12.15257	16.08955	-5.856660
Hannan-Quinn Criterion	-5.855032	-1.434885	-1.895661	1.480679
F-statistic	77.49346	1.322392	18.46895	4.069699
Prob(F-statistic)	0.000001	0.309345	0.000347	0.044097
Mean Dependent Variable	1.917452	2.091703	2.887676	1.955024
Standard Deviation of Dependent Variable	0.044062	0.111203	0.195425	0.606651
Durbin-Watson Statistic	1.749574	2.073367	1.949454	1.974540

Source: Field Result, 2024

The analysis explores the influence of corruption on different aspects of financial development in Nigeria, specifically focusing on financial access, depth, efficiency, and stability. The results provide insight into how corruption affects these financial dimensions, revealing both immediate and lagged effects.

For Financial Development (Access), the results show a highly significant and positive effect of the lagged dependent variable (coefficient = 0.9881, p = 0.0000). This indicates a strong persistence in financial access, suggesting that past levels of financial access significantly influence current levels. However, the immediate impact of corruption on access is not statistically significant (coefficient = 0.0008, p = 0.1346), indicating that current corruption levels do not directly influence financial access. The model displays strong explanatory power, with an R-squared value of 0.9394, meaning that approximately 93.94% of the variation in financial access is explained by the model. The overall model fit is confirmed by the highly significant F-statistic (77.4935, p = 0.000001), suggesting that the variables collectively provide a robust explanation of financial access trends.

In contrast, the model assessing Financial Development (Depth) does not exhibit strong explanatory power. The lagged dependent variable is statistically insignificant (coefficient = 0.0059, p = 0.9838), implying little persistence in financial depth over time. Similarly, the direct effect of corruption on financial depth is not significant (coefficient = -0.0071, p = 0.2683). With an R-squared value of only 0.2092, the model explains a limited portion of the variation in financial depth, and the overall insignificance of the model is reflected by the F-statistic (F = 1.3224, p = 0.3093). These results suggest that neither current nor lagged corruption levels play a strong role in determining financial depth in Nigeria.

When examining Financial Development (Efficiency), the analysis reveals a significant positive effect of the lagged dependent variable (coefficient = 0.8608, p = 0.0014), indicating strong persistence in financial efficiency. Interestingly, while the immediate impact of corruption on efficiency is marginally significant (coefficient = 0.0093, p = 0.0821), the lagged effect of corruption is significantly negative (coefficient = -0.0168, p = 0.0098). This suggests that although

current corruption may have a weak positive influence, past corruption levels tend to reduce financial efficiency. The model demonstrates a high level of explanatory power, with an R-squared of 0.8603, and the overall fit is confirmed by a significant F-statistic (F = 18.4690, p = 0.000347). These findings highlight the complex relationship between corruption and financial efficiency, where both immediate and lagged effects need to be considered.

For Financial Development (Stability), the lagged dependent variable shows a moderately significant effect (coefficient = 0.5889, p = 0.0506), indicating some persistence in financial stability over time. The direct impact of corruption is significant and negative (coefficient = -0.1000, p = 0.0079), suggesting that higher levels of corruption are associated with decreased financial stability. Interestingly, the lagged corruption variable has a significant positive effect (coefficient = 0.0434, p = 0.0451), implying that previous levels of corruption might contribute to adjustments in perceived financial stability over time. The model's explanatory power is moderate, with an R-squared value of 0.5757, and the F-statistic (F = 4.0697, p = 0.0441) indicates overall statistical significance. These results suggest that while current corruption undermines financial stability, its lagged effects may have a stabilizing influence, possibly due to delayed regulatory or structural adjustments.

Therefore, H02 is rejected for Stability and partially for Efficiency due to significant effects of corruption, but it is not rejected for Access and Depth, where no significant effects are observed. This suggests that higher corruption levels significantly hinder financial stability and, to a lesser extent, financial efficiency in Nigeria, potentially by undermining institutional trust and operational effectiveness, while financial access and depth appear less sensitive to corruption influences in this context.

Hypothesis Three:

$H_0$3: There are no causal relationships among monetary policy, corruption level, and financial development in Nigeria.

1. **Financial Development (Access)**

Table 4.9 Causal Relationships Monetary Policy Rate (MPR), Corruption and Financial Development (Access)

Null Hypothesis	F-Statistic	Prob.
Monetary Policy Rate (MPR) and Financial Development (Access)		
MPR does not Granger Cause Financial Development (Access)	1.55326	0.2765
Financial Development (Access) does not Granger Cause MPR	0.85650	0.4648
Money Supply (M2) and Financial Development (Access)		
M2 does not Granger Cause Financial Development (Access)	2.35808	0.1649
Financial Development (Access) does not Granger Cause M2	0.40720	0.6803
Inflation (INF) and Financial Development (Access)		
INF does not Granger Cause Financial Development (Access)	0.08380	0.9205
Financial Development (Access) does not Granger Cause INF	2.71383	0.1341
Corruption and Financial Development (Access)		
Corruption does not Granger Cause Financial Development (Access)	0.88317	0.4550
Financial Development (Access) does not Granger Cause Corruption	13.7770	0.0037
Money Supply (M2) and Monetary Policy Rate (MPR)		
M2 does not Granger Cause MPR	1.78428	0.2365
MPR does not Granger Cause M2	0.55416	0.5978
Inflation (INF) and Monetary Policy Rate (MPR)		
INF does not Granger Cause MPR	8.27395	0.0143
MPR does not Granger Cause INF	1.18483	0.3604
Corruption and Monetary Policy Rate (MPR)		
Corruption does not Granger Cause MPR	0.08708	0.9176
MPR does not Granger Cause Corruption	2.14557	0.1876
Inflation (INF) and Money Supply (M2)		
INF does not Granger Cause M2	0.07775	0.9260
M2 does not Granger Cause INF	4.13272	0.0653
Corruption and Money Supply (M2)		
Corruption does not Granger Cause M2	1.73390	0.2445
M2 does not Granger Cause Corruption	7.82366	0.0164
Corruption and Inflation (INF)		
Corruption does not Granger Cause INF	2.30931	0.1697
INF does not Granger Cause Corruption	0.96271	0.4272

Source: Field Result, 2024

The results from Table 4.9 present the findings of the Granger causality tests examining the relationships among monetary policy rate (MPR), corruption, and financial development (access) in Nigeria. The null hypothesis that the monetary policy rate does not Granger cause financial development is not rejected, with F = 1.55326 and P = 0.2765. Similarly, financial development does not Granger cause the monetary policy rate, indicated by F = 0.85650 and P = 0.4648, suggesting no significant predictive relationship between these variables.

In terms of money supply (M2) and financial development (access), the tests show that M2 does not Granger cause financial development, with F = 2.35808 and P = 0.1649. Conversely, financial development does not Granger cause M2, as evidenced by F = 0.40720 and P = 0.6803. The analysis further indicates that inflation (INF) does not Granger cause financial development (access), with F = 0.08380 and P = 0.9205; nor does financial development Granger cause inflation, shown by F = 2.71383 and P = 0.1341.

Regarding corruption and financial development (access), there is no significant causality found; corruption does not Granger cause financial development (F = 0.88317, P = 0.4550), while financial development does Granger cause corruption, with significant results of F = 13.7770 and P = 0.0037, indicating a strong predictive relationship where changes in financial development can significantly influence corruption levels.

When analyzing the relationship between money supply (M2) and the monetary policy rate (MPR), the results indicate no significant causality in either direction; M2 does not Granger cause MPR (F = 1.78428, P = 0.2365), nor does MPR Granger cause M2 (F = 0.55416, P = 0.5978). However, a significant relationship is found between inflation and the monetary policy rate; inflation Granger causes the monetary policy rate with F = 8.27395 and P = 0.0143, while the reverse causality is not significant (F = 1.18483, P = 0.3604).

The analysis also shows no significant causality between corruption and the monetary policy rate; specifically, corruption does not Granger cause MPR (F = 0.08708, P = 0.9176), nor does MPR Granger cause corruption (F = 2.14557, P = 0.1876). In examining inflation (INF) and money supply (M2), it is found that inflation does not Granger cause M2 (F = 0.07775, P = 0.9260), while there is marginal significance in the reverse direction where M2 Granger causes inflation (F = 4.13272, P = 0.0653).

Finally, regarding corruption and money supply (M2), the results indicate that corruption does not Granger cause M2 (F = 1.73390, P = 0.2445); however, there is significant unidirectional causality from money supply to corruption with F = 7.82366 and P = 0.0164, suggesting that increases in money supply may lead to higher levels of corruption. Lastly, there is no significant causality between corruption and inflation in either direction; specifically, corruption does not Granger cause inflation (F = 2.30931, P = 0.1697), nor does inflation Granger cause corruption (F = 0.96271, P = 0.4272). These findings suggest that while there are some significant relationships particularly between financial development and corruption as well as between inflation and the monetary policy rate most other relationships among these variables do not exhibit significant causality within this framework.

2. **Financial Development (Depth)**

Table 4.10 Monetary Policy Rate, Corruption and Financial Development (Depth)

Null Hypothesis	F-Statistic	Prob.
Monetary Policy Rate and Financial Development (Depth)		
Monetary Policy Rate does not Granger Cause Financial Development (Depth)	1.58750	0.2701
Financial Development (Depth) does not Granger Cause Monetary Policy Rate	0.49273	0.6307
Financial Depth (M2) and Financial Development (Depth)		
Financial Depth (M2) does not Granger Cause Financial Development (Depth)	0.04826	0.9532
Financial Development (Depth) does not Granger Cause Financial Depth (M2)	1.56433	0.2744
Inflation (INF) and Financial Development (Depth)		
Inflation (INF) does not Granger Cause Financial Development (Depth)	2.27352	0.1735
Financial Development (Depth) does not Granger Cause Inflation (INF)	2.05547	0.1985
Corruption and Financial Development (Depth)		
Corruption does not Granger Cause Financial Development (Depth)	1.19275	0.3583
Financial Development (Depth) does not Granger Cause Corruption	0.08524	0.9192
Financial Depth (M2) and Monetary Policy Rate		
Financial Depth (M2) does not Granger Cause Monetary Policy Rate	1.78428	0.2365
Monetary Policy Rate does not Granger Cause Financial Depth (M2)	0.55416	0.5978
Inflation (INF) and Monetary Policy Rate		
Inflation (INF) does not Granger Cause Monetary Policy Rate	8.27395	0.0143**
Monetary Policy Rate does not Granger Cause Inflation (INF)	1.18483	0.3604
Corruption and Monetary Policy Rate		
Corruption does not Granger Cause Monetary Policy Rate	0.08708	0.9176
Monetary Policy Rate does not Granger Cause Corruption	2.14557	0.1876
Inflation (INF) and Financial Depth (M2)		
Inflation (INF) does not Granger Cause Financial Depth (M2)	0.07775	0.9260
Financial Depth (M2) does not Granger Cause Inflation (INF)	4.13272	0.0653
Corruption and Financial Depth (M2)		
Corruption does not Granger Cause Financial Depth (M2)	1.73390	0.2445
Financial Depth (M2) does not Granger Cause Corruption	7.82366	0.0164**
Corruption and Inflation (INF)		
Corruption does not Granger Cause Inflation (INF)	2.30931	0.1697
Inflation (INF) does not Granger Cause Corruption	0.96271	0.4272

Source: Field Result, 2024

The results from the Granger causality tests examining the relationships among monetary policy rate (MPR), corruption, and financial development (depth) in Nigeria reveal several key findings. First, the null hypothesis that the monetary policy rate does not Granger cause financial development is not rejected, as indicated by F = 1.58750, P = 0.2701. Similarly, financial development does not Granger cause the monetary policy rate, with F = 0.49273, P = 0.6307, suggesting no significant predictive relationship between these variables.

In terms of financial depth (M2) and financial development (depth), the tests show that financial depth does not Granger cause financial development, with F = 0.04826, P = 0.9532. Conversely, financial development does not Granger cause financial depth either, evidenced by F = 1.56433, P = 0.2744.

The analysis further indicates that inflation (INF) does not Granger cause financial development (depth), with F = 2.27352, P = 0.1735; nor does financial development Granger cause inflation, as shown by F = 2.05547, P = 0.1985. Regarding corruption and financial development, there is no significant causality found; corruption does not Granger cause financial development (F = 1.19275, P = 0.3583), nor does financial development Granger cause corruption (F = 0.08524, P = 0.9192).

When examining the relationship between financial depth (M2) and the monetary policy rate, the results reveal no significant causality in either direction; specifically, financial depth does not Granger cause the monetary policy rate (F = 1.78428, P = 0.2365), nor does the monetary policy rate Granger cause financial depth (F = 0.55416, P = 0.5978). However, a significant relationship is identified between inflation and the monetary policy rate, where inflation Granger causes the monetary policy rate (F = 8.27395, P = 0.0143), while the reverse causality is not significant (F = 1.18483, P = 0.3604).

The analysis also shows no significant causality between corruption and the monetary policy rate; specifically, corruption does not Granger cause the monetary policy rate (F = 0.08708, P = 0.9176), nor does the monetary policy rate Granger cause corruption (F = 2.14557, P = 0.1876). In examining inflation (INF) and financial depth (M2), it is found that inflation does not Granger cause financial depth (F = 0.07775, P = 0.9260), while there is marginal significance in the reverse direction where financial depth Granger causes inflation (F = 4.13272, P = 0.0653).

Finally, regarding corruption and financial depth (M2), the results indicate that corruption does not Granger cause financial depth (F = 1.73390, P = 0.2445); however, there is significant unidirectional causality from financial depth to corruption with F = 7.82366 and P = 0.0164. Lastly, there is no significant causality between corruption and inflation in either direction; specifically, corruption does not Granger cause inflation (F = 2.30931, P = 0.1697), nor does inflation Granger cause corruption (F = 0.96271, P = 0.4272). These findings suggest that while there are some significant relationships particularly between inflation and the monetary policy rate as well as between financial depth and corruption most other relationships among these variables do not exhibit significant causality within this framework.

3. **Financial Development (Efficiency)**

Table 4.11 Monetary Policy Rate, Corruption and Financial Development (Efficiency)

Null Hypothesis	F-Statistic	Prob.
Monetary Policy Rate and Financial Development (Efficiency)		
Monetary Policy Rate does not Granger Cause Financial Development (Efficiency)	0.81845	0.4793
Financial Development (Efficiency) does not Granger Cause Monetary Policy Rate	0.02923	0.9713
Financial Depth (M2) and Financial Development (Efficiency)		
Financial Depth (M2) does not Granger Cause Financial Development (Efficiency)	3.19564	0.1033
Financial Development (Efficiency) does not Granger Cause Financial Depth (M2)	0.31767	0.7378
Inflation (INF) and Financial Development (Efficiency)		
Inflation (INF) does not Granger Cause Financial Development (Efficiency)	0.35858	0.7108
Financial Development (Efficiency) does not Granger Cause Inflation (INF)	1.16674	0.3653
Corruption and Financial Development (Efficiency)		
Corruption does not Granger Cause Financial Development (Efficiency)	4.15805	0.0645
Financial Development (Efficiency) does not Granger Cause Corruption	4.02183	0.0687
Financial Depth (M2) and Monetary Policy Rate		
Financial Depth (M2) does not Granger Cause Monetary Policy Rate	1.78428	0.2365
Monetary Policy Rate does not Granger Cause Financial Depth (M2)	0.55416	0.5978
Inflation (INF) and Monetary Policy Rate		
Inflation (INF) does not Granger Cause Monetary Policy Rate	8.27395	0.0143 **
Monetary Policy Rate does not Granger Cause Inflation (INF)	1.18483	0.3604
Corruption and Monetary Policy Rate		
Corruption does not Granger Cause Monetary Policy Rate	0.08708	0.9176
Monetary Policy Rate does not Granger Cause Corruption	2.14557	0.1876
Inflation (INF) and Financial Depth (M2)		
Inflation (INF) does not Granger Cause Financial Depth (M2)	0.07775	0.9260
Financial Depth (M2) does not Granger Cause Inflation (INF)	4.13272	0.0653
Corruption and Financial Depth (M2)		
Corruption does not Granger Cause Financial Depth (M2)	1.73390	0.2445
Financial Depth (M2) does not Granger Cause Corruption	7.82366	0.0164 **
Corruption and Inflation (INF)		
Corruption does not Granger Cause Inflation (INF)	2.30931	0.1697
Inflation (INF) does not Granger Cause Corruption	0.96271	0.4272

Source: Field Result, 2024

Table 4.11 presents the results of the Granger causality tests examining the relationships between monetary policy rate (MPR), corruption, and financial development (efficiency). The findings provide insights into the interactions between these variables, with significance levels determined by the p-values.

First, the relationship between the monetary policy rate and financial development (efficiency) is tested. The results show that the monetary policy rate does not Granger cause financial development (efficiency), with an F-statistic of 0.81845 and a p-value of 0.4793, which is greater than the 0.05 significance level. Similarly, financial development (efficiency) does not Granger cause the monetary policy rate (F = 0.02923, p = 0.9713), suggesting no significant causality between these two variables.

Next, for the relationship between financial depth (M2) and financial development (efficiency), the results reveal that financial depth (M2) does not Granger cause financial development (efficiency) (F = 3.19564, p = 0.1033), while the reverse causality is also insignificant (F = 0.31767, p = 0.7378). These results indicate that changes in financial depth (M2) do not significantly affect financial development (efficiency), and vice versa.

The analysis of inflation (INF) and financial development (efficiency) shows that neither variable Granger causes the other. Inflation does not Granger cause financial development (efficiency) (F = 0.35858, p = 0.7108), and financial development (efficiency) does not Granger cause inflation (F = 1.16674, p = 0.3653), suggesting no significant relationship between these two variables.

The relationship between corruption and financial development (efficiency) reveals marginal significance. Corruption does Granger cause financial development (efficiency) (F = 4.15805, p = 0.0645), and financial development (efficiency) also Granger causes corruption (F = 4.02183, p =

0.0687), both with p-values just above the 0.05 threshold, indicating a potential relationship that may be significant at a less stringent threshold.

The relationship between financial depth (M2) and the monetary policy rate also shows no significant causality. Neither financial depth (M2) Granger causes the monetary policy rate (F = 1.78428, p = 0.2365) nor the monetary policy rate Granger causes financial depth (M2) (F = 0.55416, p = 0.5978), suggesting no significant relationship between these variables.

Inflation (INF) and the monetary policy rate show a significant causal relationship in one direction. Inflation does Granger cause the monetary policy rate (F = 8.27395, p = 0.0143), indicating a significant relationship. However, the reverse causality—monetary policy rate causing inflation—does not show significance (F = 1.18483, p = 0.3604).

The analysis of corruption and the monetary policy rate shows no significant causality. Neither does corruption Granger cause the monetary policy rate (F = 0.08708, p = 0.9176) nor the monetary policy rate Granger cause corruption (F = 2.14557, p = 0.1876), suggesting no significant relationship between these two variables.

Inflation (INF) and financial depth (M2) reveal that financial depth (M2) does not significantly affect inflation (F = 0.07775, p = 0.9260), while the reverse causality is marginally significant (F = 4.13272, p = 0.0653), suggesting a potential relationship where changes in inflation might influence financial depth (M2).

Finally, the relationship between corruption and financial depth (M2) shows that corruption does not Granger cause financial depth (M2) (F = 1.73390, p = 0.2445), but financial depth (M2) does Granger cause corruption (F = 7.82366, p = 0.0164), indicating a significant relationship in the reverse direction, where changes in financial depth may lead to increased corruption.

The relationship between corruption and inflation (INF) shows no significant causality in either direction. Corruption does not Granger cause inflation (F = 2.30931, p = 0.1697), and inflation does not Granger cause corruption (F = 0.96271, p = 0.4272), suggesting no significant relationship between these two variables.

Based on the results of the Granger causality tests presented in Table 4.10, several conclusions can be drawn regarding the significance of the relationships among monetary policy rate (MPR), corruption, and financial development (efficiency) in Nigeria. The findings indicate significant relationships where corruption Granger causes financial development, financial development Granger causes corruption, inflation Granger causes the monetary policy rate, and financial depth (M2) Granger causes corruption. These relationships suggest a complex interplay among these variables, highlighting the importance of addressing both corruption and monetary policy in efforts to enhance financial development and stability in Nigeria.

4. **Financial Development (Stability)**

Table 4.12 Monetary Policy Rate, Corruption and Financial Development (Stability)

Null Hypothesis	F-Statistic	Prob.
Monetary Policy Rate and Financial Development (Stability)		
Monetary Policy Rate does not Granger Cause Financial Development (Stability)	3.11529	0.1077
Financial Development (Stability) does not Granger Cause Monetary Policy Rate	1.54348	0.2784
Financial Depth (M2) and Financial Development (Stability)		
Financial Depth (M2) does not Granger Cause Financial Development (Stability)	1.14989	0.3700
Financial Development (Stability) does not Granger Cause Financial Depth (M2)	0.64113	0.5550
Inflation (INF) and Financial Development (Stability)		
Inflation (INF) does not Granger Cause Financial Development (Stability)	1.77672	0.2377
Financial Development (Stability) does not Granger Cause Inflation (INF)	1.55788	0.2756
Corruption and Financial Development (Stability)		
Corruption does not Granger Cause Financial Development (Stability)	9.76386	0.0094**
Financial Development (Stability) does not Granger Cause Corruption	1.50037	0.2869
Financial Depth (M2) and Monetary Policy Rate		
Financial Depth (M2) does not Granger Cause Monetary Policy Rate	1.78428	0.2365
Monetary Policy Rate does not Granger Cause Financial Depth (M2)	0.55416	0.5978
Inflation (INF) and Monetary Policy Rate		
Inflation (INF) does not Granger Cause Monetary Policy Rate	8.27395	0.0143**
Monetary Policy Rate does not Granger Cause Inflation (INF)	1.18483	0.3604
Corruption and Monetary Policy Rate		
Corruption does not Granger Cause Monetary Policy Rate	0.08708	0.9176
Monetary Policy Rate does not Granger Cause Corruption	2.14557	0.1876
Inflation (INF) and Financial Depth (M2)		
Inflation (INF) does not Granger Cause Financial Depth (M2)	0.07775	0.9260
Financial Depth (M2) does not Granger Cause Inflation (INF)	4.13272	0.0653
Corruption and Financial Depth (M2)		
Corruption does not Granger Cause Financial Depth (M2)	1.73390	0.2445
Financial Depth (M2) does not Granger Cause Corruption	7.82366	0.0164**
Corruption and Inflation (INF)		
Corruption does not Granger Cause Inflation (INF)	2.30931	0.1697
Inflation (INF) does not Granger Cause Corruption	0.96271	0.4272

Source: Field Result, 2024

Table 4.12 presents the results of the Granger causality tests examining the relationships between the monetary policy rate (MPR), corruption, and financial development (stability). The results provide valuable insights into the causality between these key variables, with significance levels determined by the p-values.

For the relationship between the monetary policy rate and financial development (stability), the results show that the monetary policy rate does not Granger cause financial development (stability), as indicated by the F-statistic of 3.11529 and a p-value of 0.1077, which is greater than the 0.05 significance level. Similarly, financial development (stability) does not Granger cause the monetary policy rate (F = 1.54348, p = 0.2784), indicating no significant causality between these variables.

For the relationship between financial depth (M2) and financial development (stability), the results reveal that financial depth (M2) does not Granger cause financial development (stability) (F = 1.14989, p = 0.3700), and financial development (stability) does not Granger cause financial depth (M2) (F = 0.64113, p = 0.5550). These findings suggest no significant causal relationship between these variables.

The relationship between inflation (INF) and financial development (stability) also shows no significant causality. Inflation does not Granger cause financial development (stability) (F = 1.77672, p = 0.2377), and financial development (stability) does not Granger cause inflation (F = 1.55788, p = 0.2756), suggesting no significant interaction between inflation and financial development (stability).

The relationship between corruption and financial development (stability) shows significant results. Corruption does Granger cause financial development (stability) (F = 9.76386, p = 0.0094), indicating a statistically significant causality between these two variables. However, the reverse

causality financial development (stability) causing corruption—is not significant (F = 1.50037, p = 0.2869).

For the relationship between financial depth (M2) and the monetary policy rate, the results indicate no significant causality. Neither does financial depth (M2) Granger cause the monetary policy rate (F = 1.78428, p = 0.2365), nor does the monetary policy rate Granger cause financial depth (M2) (F = 0.55416, p = 0.5978), suggesting no significant relationship between these two variables.

The relationship between inflation (INF) and the monetary policy rate reveals a significant result. Inflation does Granger cause the monetary policy rate (F = 8.27395, p = 0.0143), indicating a significant one-way causality. However, the reverse causality—monetary policy rate causing inflation—does not show significance (F = 1.18483, p = 0.3604).

The analysis of corruption and the monetary policy rate shows no significant causality. Neither does corruption Granger cause the monetary policy rate (F = 0.08708, p = 0.9176), nor does the monetary policy rate Granger cause corruption (F = 2.14557, p = 0.1876), suggesting no significant relationship between these two variables.

Inflation (INF) and financial depth (M2) show that inflation does not Granger cause financial depth (M2) (F = 0.07775, p = 0.9260), while the reverse causality is marginally significant (F = 4.13272, p = 0.0653), suggesting that financial depth (M2) may be influenced by changes in inflation.

Finally, the relationship between corruption and financial depth (M2) reveals that corruption does not Granger cause financial depth (M2) (F = 1.73390, p = 0.2445), but financial depth (M2) does Granger cause corruption (F = 7.82366, p = 0.0164), indicating a significant relationship in the reverse direction, where changes in financial depth may lead to increased corruption.

The relationship between corruption and inflation (INF) shows no significant causality in either direction. Corruption does not Granger cause inflation (F = 2.30931, p = 0.1697), and inflation does not Granger cause corruption (F = 0.96271, p = 0.4272), suggesting no significant relationship between these two variables.

The results in Table 4.12 show that conclusions can be drawn regarding the significance of the relationships among monetary policy, corruption, and financial development in Nigeria. Significant relationships were found where corruption Granger causes financial development (stability), indicating that higher levels of corruption are associated with changes in financial stability; inflation Granger causes the monetary policy rate, suggesting that inflationary pressures influence monetary policy decisions; and financial depth (M2) Granger causes corruption, indicating that variations in financial depth may affect corruption levels.

The null hypothesis (H03): There are no causal relationships among monetary policy, corruption level, and financial development in Nigeria) is rejected for specific dimensions of financial development due to significant Granger causality relationships identified in Tables 4.9, 4.10, 4.11, and 4.12. For Financial Development (Access), significant causality is observed where Financial Development Granger causes Corruption (F = 13.7770, p = 0.0037). These findings indicate significant causal relationships, particularly involving corruption's impact on Stability and Efficiency, and monetary policy's interaction with corruption, leading to the rejection of H03 for Access, Efficiency, and Stability, but not for Depth.

Hypothesis Four:

$H_0$4: Investigate the role of exchange rate as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria

Table 4.13 Exchange Rate as A Control Variable in the Relationship Between Monetary Policy, Corruption, and Financial Development in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept (C(1))	-7.545820	14.56387	-0.518119	0.6265
Monetary Policy Rate	-0.108523	0.317039	-0.342302	0.7460
Money Supply	0.530113	0.639447	0.829019	0.4449
Inflation	0.151812	1.793782	0.084632	0.9358
Exchange Rate	0.130431	0.248629	0.524602	0.6223
Corruption	0.389090	0.725324	0.536436	0.6147
Interaction (MPR x Corruption)	0.004777	0.011836	0.403619	0.7032
Interaction (M2 x Corruption)	-0.023491	0.035966	-0.653161	0.5425
Interaction (INF x Corruption)	-0.006931	0.069824	-0.099269	0.9248

Model Statistics

Statistic	Value
R-squared	0.872450
Adjusted R-squared	0.668371
S.E. of Regression	0.025055
Akaike Info Criterion	-4.279387
Sum Squared Residuals	0.003139
Schwarz Criterion	-3.868565
Log Likelihood	38.95571
Hannan-Quinn Criterion	-4.317416
F-statistic	5.275058
Prob(F-statistic)	0.043154
Mean Dependent Variable	1.914768
S.D. Dependent Variable	0.043508
Durbin-Watson Statistic	1.930407

Source: Field Result, 2024

Table 4.13 investigates the role of the exchange rate as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria. The coefficients and associated statistics provide insights into how these variables interact and their implications for

economic policy. Starting with the Monetary Policy Rate (MPR), the coefficient is β = -0.108523, with a standard error of 0.317039, yielding a t-statistic of t = -0.342302 and a probability value of p = 0.7460 (β = -0.109, t = -0.342, p = 0.746). This indicates that changes in the MPR do not significantly influence financial development when controlling for other variables. The high p-value suggests that monetary policy may not be an effective tool for enhancing financial access in Nigeria, implying that adjustments to interest rates are unlikely to drive improvements in financial development.

In examining the Money Supply (M2), the coefficient is β = 0.530113, with a standard error of 0.639447, leading to a t-statistic of t = 0.829019 and a probability value of p = 0.4449 (β = 0.530, t = 0.829, p = 0.445). While this positive coefficient suggests a potential relationship between money supply and financial development, the lack of statistical significance indicates that increases in money supply alone may not be sufficient to enhance financial access or drive economic growth.

The analysis of Inflation (INF) reveals a coefficient of β = 0.151812 with a standard error of 1.793782, resulting in a t-statistic of t = 0.084632 and a probability value of p = 0.9358 (β = 0.152, t = 0.085, p = 0.936). This result indicates that inflation does not have a significant effect on financial development within this model framework. The high p-value suggests that inflationary pressures may not directly contribute to improving financial access, which could be indicative of broader economic instability.

Turning to the Exchange Rate, the coefficient is β = 0.130431 with a standard error of 0.248629, yielding a t-statistic of t = 0.524602 and a probability value of p = 0.6223 (β = 0.130, t = 0.525, p = 0.622). This finding suggests that fluctuations in the exchange rate do not significantly impact

financial development when other factors are controlled for, indicating that exchange rate stability may not be directly linked to improvements in financial access.

The coefficient for Corruption is β = 0.389090 with a standard error of 0.725324, resulting in a t-statistic of t = 0.536436 and a probability value of p = 0.6147 (β = 0.389, t = 0.536, p = 0.615). This suggests that corruption does not significantly impede financial development within this model; however, it raises questions about whether corruption's effects might manifest through more complex interactions not fully captured by this analysis.

The interaction term for MPR x Corruption shows a coefficient of β = 0.004777 with a standard error of 0.011836, yielding a t-statistic of t = 0.403619 and a probability value of p = 0.7032 (β = 0.005, t = 0.404, p = 0.703). This indicates no significant interaction effect between monetary policy and corruption on financial development, suggesting that corruption does not alter the influence of monetary policy on financial access.

Similarly, the interaction term for M2 x Corruption presents a coefficient of β = -0.023491 with a standard error of 0.035966 and yields a t-statistic of t = -0.653161 with a probability value of p = 0.5425 (β = -0.023, t = -0.653, p = 0.543). This result reinforces the notion that corruption does not significantly impact the relationship between money supply and financial development.

Finally, the interaction term for INF x Corruption shows a coefficient of β = -0.006931 with a standard error of 0.069824, resulting in a t-statistic of t = -0.099269 and a probability value of p = 0.9248 (β = -0.007, t = -0.099, p = 0.925). This indicates that there is no significant interaction effect between inflation and corruption on financial development either.

The null hypothesis H04 that exchange rate does not play a significant role as a control variable in the relationship between monetary policy, corruption, and financial development in Nigeria is not rejected based on the results from Table 4.13. The coefficient for Exchange Rate (β = 0.130431, p

= 0.6223) is not statistically significant, indicating that it does not significantly influence financial development. Although the overall model is statistically significant (F = 5.275058, p = 0.043154) with a high R-squared value (0.872450), indicating that the variables collectively explain a substantial portion of the variance in financial development, the lack of significant effects from individual predictors, including Exchange Rate, suggests that Exchange Rate does not play a significant role as a control variable in this context. Therefore, H04 is not rejected.

4.5 Discussion of Findings

The relationship between monetary policy and financial development in Nigeria.

The findings of monetary policy indicators and financial development metrics indicate mixed effects of monetary policy on different aspects of financial development. While increases in Money Supply are linked to reduced financial access, they enhance financial depth, revealing a potential trade-off between expanding financial services and broadening access. This outcome aligns partially with the observations of that while an expanded Money Supply can stimulate financial growth, it does not necessarily translate to greater inclusiveness[1]. Similarly, a study observed that liquidity injections often favor established sectors, thus enhancing depth but limiting access for underserved populations[2].

In contrast, the study diverges from the findings that increased Money Supply in Sub-Saharan Africa typically improves access as financial institutions utilize surplus liquidity to expand their customer base[3]. This discrepancy underscores the importance of considering structural differences in financial systems, suggesting that Nigerian financial markets may require more targeted measures to improve inclusiveness alongside deepening.

Furthermore, the study reveals that tighter Monetary Policy Rates (e.g., higher interest rates) tend to constrain financial depth while having a negligible impact on financial efficiency. This finding

is consistent with the results that contractionary monetary policies in Sub-Saharan African countries often limit credit availability, reducing the depth of financial services[4]. However, the lack of significant effects on financial efficiency mirrors the findings that financial institutions tend to adapt their operations to maintain efficiency despite changes in policy rates, particularly in developed markets with stronger financial infrastructures[4].

The positive contribution of Inflation to financial stability observed in this study might seem counterintuitive, yet it aligns with the adaptive policy framework[5]. It was argued that moderate inflation, when well-managed, can signify robust economic activity, prompting financial institutions to implement stability-enhancing measures. This suggests that in the Nigerian context, adaptive monetary policies may have mitigated the adverse effects typically associated with inflation. Conversely, a study pointed out that inflation generally undermines financial stability in Sub-Saharan Africa due to its negative impact on purchasing power and investor confidence, highlighting potential differences in inflation dynamics across regions[6].

The strong explanatory power of the models, evidenced by the significant Error Correction Mechanism (ECM), supports the findings of a study employed similar econometric techniques[2]. The significant ECM term indicates an efficient adjustment process, confirming the dynamic interplay between monetary policy and financial development metrics. This result is consistent with the broader empirical literature underscores the importance of tailored monetary policies to address the specific characteristics of financial markets[7].

The study contributes to the existing body of literature by highlighting the nuanced effects of monetary policy on financial development in Nigeria. While the findings support some existing evidence, they also underscore the need for context-specific monetary policies that balance the trade-offs between financial access, depth, and stability. This aligns with the recommendations of a

study, that advocate for differentiated policy frameworks based on the structural attributes of individual economies[5].

Corruption level has no significant effect on financial development in Nigeria.

The findings of this study suggest that corruption's immediate impact on Financial Development (Access) and Financial Development (Depth) is limited, while its lagged effects on Financial Development (Efficiency) and Financial Development (Stability) are significant. This relationship highlights the delayed but profound influence of historical corruption levels on financial performance, particularly in the areas of efficiency and stability.

The limited immediate impact of corruption on Financial Development (Access) and Financial Development (Depth) in this study aligns with the findings of a study that used cointegration analysis to show that corruption does not always have a direct or immediate impact on expanding financial access or deepening financial markets in Nigeria[8]. They argued that the entrenched nature of corruption may take time to influence market behaviors and access channels, as initial barriers to entry for financial services remain unaffected in the short term.

However, sectoral analysis, found contrasting evidence, suggesting that corruption immediately hampers financial depth, particularly in sectors heavily reliant on external financing[9]. This discrepancy may stem from differences in the sectors examined, as their analysis focused on industries with significant foreign investment, where corruption can directly deter participation and capital inflow, thereby reducing financial depth.

The significant lagged effects of corruption on Financial Development (Efficiency) and Financial Development (Stability) observed in this study are consistent with the findings noted that the impact of corruption tends to manifest more clearly over time, as entrenched corrupt practices gradually undermine the operational efficiency of financial institutions[10]. Their threshold analysis

showed that once corruption exceeds a certain level, it starts to significantly erode financial efficiency, suggesting that policy responses need to be forward-looking to mitigate these delayed effects.

Similarly, historical levels of corruption have a pronounced effect on financial stability[11]. Using panel quantile regression, they demonstrated that higher levels of past corruption create systemic vulnerabilities, increasing the likelihood of financial crises, particularly in developing economies. This finding supports the study's results, emphasizing that tackling historical corruption is crucial for enhancing the long-term stability of financial systems.

The observed relationship between corruption and Financial Development (Efficiency), indicating that higher levels of corruption are associated with reduced financial efficiency, is strongly supported by the findings of a study[12]. In his analysis of Sub-Saharan African countries, Otusanya argued that pervasive corruption erodes institutional integrity, distorts credit allocation, and leads to inefficient financial intermediation, directly impacting financial performance. The study's emphasis on the need to address corruption for improved financial efficiency aligns well with this perspective.

Conversely, a broader comparative analysis, finding that while corruption significantly undermines financial efficiency in developing countries, the impact is less pronounced in developed economies with stronger institutional frameworks[13]. This divergence highlights the importance of robust institutional quality in mitigating the adverse effects of corruption on financial efficiency.

The significant influence of corruption on Financial Development (Stability) in the long term, as noted in this study, resonates with the findings on that shows that corruption increases financial instability by fostering an environment of uncertainty, reducing investor confidence, and increasing the risk of banking crises[14]. The delayed impact observed in the current study may

reflect the time it takes for corrupt practices to accumulate and affect systemic stability, a point also emphasized in their analysis of OECD countries.

On the other hand, a study argued that the relationship between corruption and financial stability in Nigeria is mediated by institutional quality[15]. They found that where strong governance frameworks are present, the adverse effects of corruption on stability are mitigated, suggesting that improving institutional quality could be an effective countermeasure.

The findings of this study provide a nuanced understanding of the complex relationship between corruption and various aspects of financial development in Nigeria. While the immediate effects on financial access and depth are limited, the significant lagged impacts on financial efficiency and stability underscore the long-term risks posed by corruption. At the same time, contrasting evidence from studies suggests that sectoral differences and institutional strength play a crucial role in moderating these effects, underscoring the need for targeted policy interventions[11,15].

The causal relationships among monetary policy, corruption level, and financial development in Nigeria.

The findings from the Granger causality tests in this study reveal significant relationships among monetary policy rate (MPR), corruption, and financial development (efficiency) in Nigeria. These relationships indicate that corruption Granger causes financial development, financial development Granger causes corruption, inflation Granger causes the monetary policy rate, and money supply Granger causes corruption. This suggests a complex and dynamic interplay among these variables, underscoring the importance of addressing corruption and monetary policy in enhancing financial development and stability. The following discussion provides insights from existing literature that either support or contradict these findings.

The finding that corruption Granger causes financial development aligns with the study that found that corruption significantly influences financial development, particularly in the long run, by distorting resource allocation and affecting the efficiency of financial markets[1]. Their evidence supports the notion that entrenched corruption practices can have a lasting impact on the trajectory of financial sector growth, particularly through their influence on policy implementation and financial regulation.

Similarly, a study identified a threshold effect, where corruption negatively affects financial development only after surpassing a certain level[8]. Their findings suggest that the influence of corruption is not uniform but varies depending on the governance environment. This aligns with the causal relationship identified in the study, as it highlights the conditional and time-varying impact of corruption on financial markets.

Conversely, a study provided a different perspective, indicating that the causality between corruption and financial development is weaker in developed countries due to stronger institutional frameworks[9]. Robust governance structures mitigate the adverse effects of corruption, suggesting that the significant causal relationship found in Nigeria may be attributed to weaker institutional mechanisms.

The evidence that financial development Granger causes corruption suggests a feedback loop where improvements in financial efficiency may create opportunities for corruption, particularly in less regulated environments. This finding is supported that rapid financial sector growth in Nigeria, without corresponding enhancements in governance, can exacerbate corruption[11]. They argued that as financial markets expand, the increased flow of capital and financial transactions may provide more avenues for corrupt activities, especially in weakly regulated sectors.

The result that inflation Granger causes the monetary policy rate is consistent with the broader literature on monetary policy transmission mechanisms. Central banks in developed economies frequently adjust interest rates in response to changes in inflation, aiming to stabilize prices and control inflationary pressures[6]. Their findings indicate that inflationary trends serve as a key determinant for central banks' policy actions, supporting the causality observed in the study.

Similarly, inflationary shocks are among the primary drivers of adjustments in the monetary policy rate across various economies, both developed and developing[8]. This aligns with the present study's finding, suggesting that inflation significantly influences policy rate decisions in Nigeria as well. On the other hand, a study argued that in Nigeria, the response of the monetary policy rate to inflation is often delayed due to external pressures and political considerations[4]. This view suggests that while inflation may drive changes in the monetary policy rate, the causality might not be immediate or straightforward, highlighting the complexities of monetary policy implementation in Nigeria. The Granger causality relationships identified in this study provide important insights into the interconnectedness of monetary policy, corruption, and financial development in Nigeria. The evidence that corruption and financial development influence each other aligns with the findings on the complex feedback loop between these variables. The causal effects of inflation on the monetary policy rate are consistent with the broader literature on monetary policy transmission, as noted by Cecchetti and Schoenholtz[15]. Finally, the link between money supply and corruption emphasizes the risks associated with monetary expansion in weakly regulated environments, echoing the concerns raised[7,11]. The findings underscore the need for integrated policy measures that address both corruption and monetary policy to enhance financial stability and development in Nigeria.

The Role of Exchange Rate as a Control Variable in the Relationship between Monetary Policy, Corruption, and Financial Development in Nigeria.

The analysis of this study finds that the exchange rate has a positive influence on Financial Development (Access) in Nigeria. This suggests that a higher exchange rate enhances access to financial services, which supports its role as an important control variable in the relationship between monetary policy, corruption, and financial development. This discussion explores how the study's findings align with or contradict previous research on the subject.

The positive impact of exchange rate on financial access is consistent with the findings of on the effect of exchange rate volatility on economic growth and corruption[16]. It was concluded that a favorable exchange rate regime can enhance financial sector growth by providing stability and fostering investor confidence. Their results support the notion that an improved exchange rate environment increases access to financial services, as found in this study.

Additionally, a study explored the influence of foreign exchange rates among COMESA countries and found that a stable exchange rate significantly promotes access to credit in the private sector[17]. This is in line with the current study's findings, where higher exchange rates were associated with better financial access. A higher exchange rate, when managed effectively, encourages foreign investment and credit availability, which in turn boosts financial sector development.

The role of the exchange rate is further supported by a study, that investigated the interaction between exchange rate volatility, monetary policy, and financial development in Nigeria[18]. Nwosa's findings indicate that exchange rate fluctuations play a critical role in shaping the effectiveness of monetary policy, particularly in developing economies. The study emphasized that a positive exchange rate effect can enhance financial access by reducing the cost of imported financial services and increasing capital inflow, which supports the findings of this analysis.

Conversely, the study found that political risk significantly influences the exchange rate's effect on financial development in emerging markets[19]. They highlighted that in politically unstable environments, the positive influence of exchange rates may be weakened due to increased uncertainty and risk aversion among investors. This suggests that the strong positive relationship found in this study might be context-dependent, reflecting a relatively stable exchange rate environment during the period analyzed.

The interaction between exchange rate and corruption as it affects financial development is also noted in the findings[20]. They analyzed how exchange rate fluctuations interact with corruption control measures to influence government bond yields in Indonesia. Their study found that an effective exchange rate policy, combined with strong corruption control, significantly enhances financial market access. This aligns with the findings of the present study, where the exchange rate positively influences financial access, indicating the importance of coordinated policy measures in achieving financial development goals.

However, a study offered a different perspective, suggesting that the influence of exchange rate on financial development may be moderated by inflation and fiscal policy determinants[21]. This found that in scenarios where inflation is high, the positive effects of a favorable exchange rate are diminished, as inflation erodes purchasing power and reduces the real value of financial assets. This nuanced view implies that while the exchange rate has a positive impact on financial access, its effectiveness may be constrained by inflationary pressures, a factor that could be considered in future studies to further refine the analysis.

The relationship between exchange rate regimes and governance factors such as corruption was explored[20]. Their study found that flexible exchange rate regimes, combined with strong governance, positively influence economic growth and financial development. This supports the

current study's findings, as it highlights the importance of an effective exchange rate policy in improving financial access. Fraj et al. emphasized that the exchange rate can act as a stabilizing force in financial markets, provided that governance issues such as corruption are kept in check. On the other hand, the study the presence of significant political and economic risks, the positive influence of the exchange rate may be less pronounced[22]. This highlights a potential limitation in the current study's context, where broader political and economic stability may play a crucial role in determining the extent of the exchange rate's impact on financial access.

However, contrasting views to the potential moderating effects of inflation and political risks, which may influence the overall impact of the exchange rate on financial development[18,22]. The findings indicate the significant role of the exchange rate as a control variable, highlighting its importance in shaping the dynamics between monetary policy, corruption, and financial development. For policymakers in Nigeria, maintaining a stable and favorable exchange rate could be a key strategy in enhancing financial access and supporting broader financial sector growth.

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Chapter Five

Summary, Conclusion and Recommendation

5.1 Summary of the Findings

The findings show that monetary policy, corruption, and exchange rate dynamics play significant roles in shaping financial development in Nigeria, with notable variations across dimensions. For Financial Development (Access), the model demonstrates strong explanatory power ($R = 0.9841$, $R^2 = 0.9841$, Adj $R^2 = 0.9618$, $F = 44.134$, $p < 0.05$), indicating that monetary policy significantly influences financial access. Similarly, for Financial Depth, the model exhibits a robust fit ($R = 0.960$, $R^2 = 0.960$, Adj $R^2 = 0.940$, $F = 47.624$, $p < 0.05$), confirming the importance of monetary policy in explaining variations in financial depth.

For Financial Development (Efficiency), two models reveal meaningful fits: ($R = 0.8293$, $R^2 = 0.8293$, Adj $R^2 = 0.6586$, $F = 4.859$, $p < 0.05$) and ($R = 0.738$, $R^2 = 0.738$, Adj $R^2 = 0.651$, $F = 8.453$, $p < 0.05$), signifying a significant impact of monetary policy on financial efficiency. Financial Stability also shows moderate explanatory power ($R^2 = 0.576$, Adj $R^2 = 0.434$, $F = 4.070$, $p < 0.05$), reflecting a less pronounced yet significant relationship.

Error correction terms reveal varying adjustment speeds toward long-term equilibrium across dimensions. For Financial Access (CointEq(-1) = 0.012, $p < 0.05$) and Financial Efficiency (CointEq(-1) = -0.324, $p < 0.05$), gradual adjustments are observed. Financial Depth (CointEq(-1) = -1.215, $p < 0.05$) and Financial Stability (CointEq(-1) = -1.445, $p < 0.05$) exhibit more rapid corrections, highlighting dynamic responsiveness to imbalances.

Corruption significantly impacts Financial Access ($R^2 = 0.939$, Adj $R^2 = 0.927$, $F = 77.493$, $p < 0.05$) and Efficiency ($R^2 = 0.860$, Adj $R^2 = 0.814$, $F = 18.469$, $p < 0.05$), while its effect on

Financial Depth is negligible ($R^2 = 0.209$, Adj $R^2 = 0.051$, $F = 1.322$, $p > 0.05$). Financial Stability shows moderate explanatory power ($R^2 = 0.576$, Adj $R^2 = 0.434$, $F = 4.070$, $p < 0.05$).

Granger causality tests reveal that financial development Granger causes corruption ($F = 13.777$, $p = 0.0037$) and that money supply significantly influences inflation ($F = 4.133$, $p = 0.065$) and corruption ($F = 7.824$, $p = 0.016$). Additionally, the exchange rate, as a control variable, demonstrates moderate explanatory power ($R^2 = 0.872$, Adj $R^2 = 0.668$, $F = 5.275$, $p < 0.05$), emphasizing its critical role in financial development outcomes.

5.2 Conclusion

The empirical evidence presented in this study offers a nuanced understanding of the intricate relationship between monetary policy, corruption, and financial development in Nigeria. The findings underscore the importance of considering a multi-dimensional approach to financial development, encompassing access, depth, efficiency, and stability.

While the monetary policy rate appears to have a limited impact on financial development, money supply and exchange rate dynamics play significant roles. Increases in money supply, although associated with potential benefits, can lead to adverse consequences such as reduced financial access and stability. Conversely, a depreciating currency can positively influence financial access but may hinder efficiency. The complex interplay between these variables highlights the need for a balanced monetary policy approach that considers both short-term and long-term implications.

The study reveals a significant negative impact of corruption on financial stability. While current corruption levels may not directly affect access and depth, their lagged effects are evident. Past corruption can hinder financial efficiency and stability, emphasizing the importance of sustained anti-corruption efforts. Additionally, the findings suggest a bidirectional relationship between

financial development and corruption, whereby financial development can influence corruption levels.

The Granger causality tests highlight the dynamic nature of the relationships between monetary policy, corruption, and financial development. While the direct impact of monetary policy on financial development may be limited, its indirect effects through channels such as inflation and exchange rate fluctuations cannot be ignored. The significant influence of corruption on financial stability underscores the need for robust governance and institutional reforms to combat corruption and foster a conducive environment for financial development.

It underscores the importance of exchange rate stability in promoting a conducive environment for financial growth. Fluctuations in the exchange rate can introduce uncertainty and volatility, potentially hindering investment and economic activity. Therefore, maintaining a stable exchange rate regime can contribute to a more stable financial system and promote financial development.

5.3 Recommendations

Based on the findings of the study, the following recommendations are proposed to enhance financial development in Nigeria:

Nigerian policymakers should adopt a differentiated approach to monetary policy that considers the varied impacts on different aspects of financial development (access, depth, efficiency, and stability). For instance, policies aiming to enhance financial access may focus on promoting lending and credit facilities, while those targeting financial stability might involve regulating inflation and exchange rate volatility.

Implement anti-corruption reforms that target long-term financial efficiency and stability. This could include setting up robust audit systems, strengthening financial institutions, and enforcing

transparency in the financial sector. Such measures should be designed with the understanding that the benefits may accrue over time, addressing historical levels of corruption that impede financial stability.

The government should prioritize anti-corruption efforts specifically in financial institutions to improve financial efficiency. This could involve establishing anti-corruption task forces within financial regulatory bodies and enhancing compliance requirements. Such focused reforms could help build trust in financial institutions, increasing their efficiency and overall credibility.

Focus on long-term anti-corruption programs that target systemic weaknesses in financial governance. These programs could involve partnerships with international anti-corruption bodies, ongoing staff training in ethics for financial institutions, and public accountability initiatives. This long-term approach acknowledges the lagged effects of corruption and aims to build a more stable and efficient financial system over time.

Given the bi-directional relationship, simultaneous reforms in financial sector governance and anti-corruption measures are crucial. Nigerian policymakers should promote policies that both deter corruption and enhance financial transparency to create a virtuous cycle where improved governance supports financial development, and vice versa.

The Central Bank of Nigeria (CBN) should closely monitor inflation trends and adjust the monetary policy rate accordingly to stabilize the economy. Implementing predictive models and inflation-targeting frameworks can help the CBN preemptively adjust interest rates, reducing inflation volatility's impact on monetary stability and financial development.

Control excessive money supply by strengthening regulatory oversight on financial flows and limiting discretionary government spending. Policies such as tightening liquidity or implementing

strict fiscal rules may help prevent situations where excessive money supply could exacerbate corruption by reducing accountability in financial transactions.

Maintain exchange rate stability to improve access to financial services. The government and CBN should focus on strategies that reduce exchange rate volatility, such as implementing a managed floating exchange rate system and increasing foreign exchange reserves. These measures could help attract foreign investment, enhancing access to financial resources.

Incorporate the exchange rate into monetary policy frameworks as a key factor influencing financial development. Policymakers should design monetary policies that consider the impact of exchange rate fluctuations on financial access and development. This could involve targeting exchange rate stability alongside inflation and interest rates to support financial sector growth.

Address political risks and maintain economic stability to enhance the positive impact of the exchange rate on financial development. This can be achieved through stable governance, ensuring consistent regulatory frameworks, and promoting transparency. Such stability may reinforce the beneficial role of exchange rate policies in fostering financial development.

5.4 Contribution to Knowledge

This groundbreaking study sheds new light on how corruption influences the relationship between monetary policy and financial development in Nigeria. By examining how corruption acts as a moderating force, alongside exchange rates, the research reveals a more nuanced picture of financial development than previously understood.

The findings expand several key theories in novel ways. They show how corruption can either strengthen or weaken monetary policy's effectiveness on financial outcomes, challenging traditional views of monetary policy transmission. The research supports New Keynesian ideas

about inflation expectations while revealing how corruption can distort these relationships. It also demonstrates how corrupt practices can undermine financial intermediaries' ability to function effectively, highlighting the crucial role of institutional quality.

Using sophisticated econometric analysis, the study provides concrete evidence that corruption significantly shapes how monetary policy impacts financial efficiency and stability. The exchange rate emerges as a crucial factor in improving financial access, offering practical insights for policy development.

For policymakers, especially at the Central Bank of Nigeria, these findings emphasize the need to tackle corruption alongside monetary policy decisions. The research suggests that successful financial development requires a two-pronged approach: sound monetary policy paired with strong anti-corruption measures. This integrated perspective offers a practical roadmap for emerging economies striving to strengthen their financial sectors while battling institutional challenges.

5.5 Suggestion for Further Studies

Based on the findings from the study, several avenues for further research can be explored to build upon and deepen the understanding of the relationships between monetary policy, corruption, financial development, and institutional quality. Below are some suggested research topics for future studies:

1. The Impact of Institutional Reforms on the Efficacy of Monetary Policy in Developing Economies
2. The Role of Exchange Rate Regimes in Mitigating the Negative Effects of Corruption on Financial Development

3. The Moderating Role of Corruption in Financial Intermediation: Evidence from Different Sectors
4. The Interaction Between Monetary Policy, Inflation, and Institutional Quality: A Cross-Country Comparative Study
5. Evaluating the Effectiveness of Anti-Corruption Policies in Enhancing Monetary Policy Outcomes
6. The Role of Governance in Financial Development: Exploring Alternative Measures of Governance Beyond Corruption

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Appendices

Appendix I – Raw Data

	Dependent - Financial Development Metrics				Independent Variables				
	Financial Depth (FD):	**Financial Access (FA):**	**Financial Efficiency (FE):**	**Financial Stability (FS)**	**Monetary Policy Indicators**				**Corruption Level**
Year	Bank lending-deposit spread	Bank accounts per 1,000 adults	Financial system deposits to GDP (%)	Bank non-performing loans to gross loans (%)	**MPR**	**EXR**	**M2**	**INF**	**Corruption Level**
2010	5.516667	..	7.685022	..	8.03	154.57	11525530.34	11.8	0
2011	9.583333	..	10.52494	22.6	15.5	163.35	13303494.5	10.3	0
2012	8.386666	644.4426	18.42491	3.705225	11.88	159.26	15483847.53	12	27
2013	8.7775	650.6881	18.95354	3.393391	10.75	171.4	15688963.55	8	25
2014	7.210834	653.3528	18.26403	2.959538	24.3	188.45	18913028.98	8	27
2015	7.700833	667.4645	17.44742	4.860886	0.77	258.3	20029831.12	9.55	26
2016	9.372815	813.9205	17.42893	12.81506	10.39	455.26	23591732.58	18.55	28
2017	7.998847	923.227	16.5093	14.80963	9.49	362.83	24140634.21	15.37	27
2018	7.203185	1013.713	16.40908	11.67453	22.68	363.46	27068575.06	11.44	27
2019	6.47607	1127.679	16.46409	6.05839	13.50	360.25	28783194.45	11.98	26
2020	8.995394	1310.392	20.8361	6.024516	11.5	471.62	37828875.85	15.75	25
2021	8.039403	..	21.83342	..	11.5	409.7	44443065.59	15.63	24
2022	8.057755864	..	21.65678	7.296881	16.5	444.04	51761777.98	21.34	24
2023	8.076108727	1289.813	22.41448	7.007201	18.75	952.139	78831122	28.92	25

Appendix II – Raw Output from Eview

Discritive

	L_AC	L_DT	L_EFF	L_ST	L_MPR	L_M2	L_INF	L_CORRUPTION	L_EXR
Mean	1.914768	2.064279	2.827076	1.902792	2.432867	17.04455	2.586069	22.21429	5.719109
Median	1.911700	2.085495	2.882063	1.832999	2.458602	16.98791	2.484073	25.50000	5.890366
Maximum	1.971032	2.260025	3.109707	3.117950	3.190476	18.18282	3.364533	28.00000	6.858711
Minimum	1.866927	1.707774	2.039273	1.085033	0.261365	16.26008	2.079442	0.000000	5.040647
Std. Dev.	0.043508	0.148133	0.294392	0.614744	0.703960	0.551330	0.368313	9.488281	0.542697
Skewness	0.143722	-0.925985	-1.653232	0.451969	-2.132475	0.516884	0.493932	-1.972529	0.295036
Kurtosis	1.317530	3.543245	4.985991	2.236113	7.723415	2.455770	2.615820	5.017103	2.371058
Jarque-Bera	1.699441	2.172861	8.678173	0.817033	23.62526	0.796170	0.655357	11.45211	0.433857
Probability	0.427534	0.337419	0.013048	0.664636	0.000007	0.671605	0.720595	0.003260	0.804988
Sum	26.80676	28.89991	39.57907	26.63908	34.06013	238.6238	36.20497	311.0000	80.06753
Sum Sq. Dev.	0.024608	0.285265	1.126667	4.912830	6.442270	3.951546	1.763505	1170.357	3.828759
Observations	14	14	14	14	14	14	14	14	14

Unit root test

Null Hypothesis: D(L_AC,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.968997	0.0032
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Null Hypothesis: L_DT has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.811953	0.0183
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Null Hypothesis: L_EFF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.915653	0.0128
Test critical values:	1% level	-4.057910	
	5% level	-3.119910	
	10% level	-2.701103	

Null Hypothesis: L_ST has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.725604	0.0045
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Null Hypothesis: L_MPR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.022066	0.0106
Test critical values:	1% level	-4.057910	
	5% level	-3.119910	
	10% level	-2.701103	

Null Hypothesis: D(L_M2,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.098532	0.0007
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Null Hypothesis: D(L_INF,2) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.806947	0.0232
Test critical values:	1% level	-4.420595	
	5% level	-3.259808	
	10% level	-2.771129	

Null Hypothesis: D(L_EXR,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.637716	0.0241
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Null Hypothesis: D(L_CORRUPTION) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.70418	0.0000
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

Covariance Analysis: Ordinary
Date: 11/10/24 Time: 12:43
Sample: 2010 2023
Included observations: 14

Correlation

Probability	L_AC	L_DT	L_EFF	L_ST	L_MPR	L_M2	L_INF	L_CORRUPTION	L_EXR
L_AC	1.000000								

L_DT	0.013470	1.000000							
	0.9635	-----							
L_EFF	0.507980	0.452492	1.000000						
	0.0637	0.1043	-----						
L_ST	0.244530	0.449260	-0.108137	1.000000					
	0.3995	0.1071	0.7129	-----					
L_MPR	0.313714	0.053203	0.122489	0.163061	1.000000				

	0.2747	0.8567	0.6766	0.5775	-----			
L_M2	0.900616	0.158079	0.719110	0.152192	0.256666	1.000000		
	0.0000	0.5894	0.0037	0.6035	0.3757	-----		
L_INF	0.751080	0.187956	0.372851	0.342204	0.210430	0.796856	1.000000	
	0.0020	0.5199	0.1892	0.2311	0.4702	0.0006	-----	
L_CORRUPTION	0.314376	0.223069	0.863262	-0.159004	0.011472	0.478501	0.176308	1.000000
	0.2737	0.4433	0.0001	0.5872	0.9690	0.0835	0.5466	-----
L_EXR	0.860084	0.179588	0.600227	0.329562	0.169423	0.928228	0.845982	0.470894	1.000000
	0.0001	0.5390	0.0232	0.2499	0.5626	0.0000	0.0001	0.0892	-----

Monetary policy and Fin Dev

Dependent Variable: L_AC

Method: ARDL

Date: 11/10/24 Time: 09:33

Sample (adjusted): 2011 2023

Included observations: 13 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): L_MPR L_M2 L_INF L_EXR

Fixed regressors: C

Number of models evalulated: 16

Selected Model: ARDL(1, 0, 1, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_AC(-1)	1.011743	0.179672	5.631056	0.0024
L_MPR	0.006978	0.004363	1.599479	0.1706
L_M2	-0.103726	0.036106	-2.872843	0.0349
L_M2(-1)	0.076719	0.036902	2.078990	0.0922

L_INF	0.009039	0.015435	0.585626	0.5836
L_INF(-1)	-0.025966	0.014253	-1.821747	0.1281
L_EXR	0.044787	0.014650	3.057226	0.0282
C	0.224202	0.177590	1.262472	0.2625

R-squared	0.984073	Mean dependent var	1.917452
Adjusted R-squared	0.961776	S.D. dependent var	0.044062
S.E. of regression	0.008615	Akaike info criterion	-6.395474
Sum squared resid	0.000371	Schwarz criterion	-6.047813
Log likelihood	49.57058	Hannan-Quinn criter.	-6.466934
F-statistic	44.13374	Durbin-Watson stat	2.003104
Prob(F-statistic)	0.000338		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Error Correction Regression

Dependent Variable: D(L_AC)

Selected Model: ARDL(1, 0, 1, 1, 0)

Case 3: Unrestricted Constant and No Trend

Date: 11/10/24 Time: 16:53

Sample: 2010 2023

Included observations: 13

ECM Regression

Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.224202	0.044757	5.009357	0.0041
D(L_M2)	-0.103726	0.023150	-4.480708	0.0065
D(L_INF)	0.009039	0.008242	1.096715	0.3228

CointEq(-1)*	0.011743	0.002473	4.749312	0.0051

R-squared	0.792292	Mean dependent var	0.006842
Adjusted R-squared	0.723056	S.D. dependent var	0.012201
S.E. of regression	0.006421	Akaike info criterion	-7.010859
Sum squared resid	0.000371	Schwarz criterion	-6.837028
Log likelihood	49.57058	Hannan-Quinn criter.	-7.046589
F-statistic	11.44337	Durbin-Watson stat	3.143104
Prob(F-statistic)	0.001999		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	2.506219	10%	2.45	3.52
K	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	4.749312	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

ARDL Error Correction Regression

Dependent Variable: D(L_DT)

Selected Model: ARDL(1, 1, 1, 1, 0)

Case 3: Unrestricted Constant and No Trend

Date: 11/10/24 Time: 17:27

Sample: 2010 2023

Included observations: 13

ECM Regression

Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.632566	0.198809	13.24165	0.0002
D(L_MPR)	-0.106928	0.016787	-6.369498	0.0031
D(L_M2)	0.747138	0.174644	4.278072	0.0129
D(L_INF)	0.074440	0.062376	1.193412	0.2987
CointEq(-1)*	-1.215308	0.090669	-13.40375	0.0002

R-squared	0.959697	Mean dependent var	0.029318
Adjusted R-squared	0.939546	S.D. dependent var	0.216659
S.E. of regression	0.053271	Akaike info criterion	-2.743121
Sum squared resid	0.022703	Schwarz criterion	-2.525833
Log likelihood	22.83029	Hannan-Quinn criter.	-2.787784
F-statistic	47.62411	Durbin-Watson stat	2.222882
Prob(F-statistic)	0.000013		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	17.96604	10%	2.45	3.52
K	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-13.40375	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

ARDL Error Correction Regression

Dependent Variable: D(L_EFF)

Selected Model: ARDL(1, 1, 1, 0)

Case 3: Unrestricted Constant and No Trend

Date: 11/10/24 Time: 17:29

Sample: 2010 2023

Included observations: 13

ECM Regression

Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.569007	0.926744	4.930171	0.0026
D(L_MPR)	0.021086	0.028786	0.732523	0.4915
D(L_M2)	0.352033	0.292271	1.204475	0.2738
CointEq(-1)*	-0.324113	0.066116	-4.902171	0.0027

R-squared	0.738069	Mean dependent var	0.082341
Adjusted R-squared	0.650759	S.D. dependent var	0.180383
S.E. of regression	0.106600	Akaike info criterion	-1.391804
Sum squared resid	0.102272	Schwarz criterion	-1.217974
Log likelihood	13.04673	Hannan-Quinn criter.	-1.427534
F-statistic	8.453398	Durbin-Watson stat	1.762759
Prob(F-statistic)	0.005522		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.005213	10%	2.72	3.77
k	3	5%	3.23	4.35
		2.5%	3.69	4.89
		1%	4.29	5.61

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)

t-statistic	-4.902171	10%	-2.57	-3.46
		5%	-2.86	-3.78
		2.5%	-3.13	-4.05
		1%	-3.43	-4.37

ARDL Error Correction Regression

Dependent Variable: D(L_ST)

Selected Model: ARDL(1, 0, 0, 1, 1)

Case 2: Restricted Constant and No Trend

Date: 11/10/24 Time: 17:31

Sample: 2010 2023

Included observations: 13

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(L_INF)	1.305780	0.503545	2.593176	0.0486
D(L_EXR)	0.590921	0.432813	1.365302	0.2304
CointEq(-1)*	-1.444519	0.187907	-7.687430	0.0006

R-squared	0.864995	Mean dependent var	0.055628
Adjusted R-squared	0.837995	S.D. dependent var	0.844539
S.E. of regression	0.339926	Akaike info criterion	0.878997
Sum squared resid	1.155497	Schwarz criterion	1.009370
Log likelihood	-2.713481	Hannan-Quinn criter.	0.852200
Durbin-Watson stat	1.764240		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.924715	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Dependent Variable: L_DT

Method: ARDL

Date: 11/10/24 Time: 09:45

Sample (adjusted): 2011 2023

Included observations: 13 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): L_MPR L_M2 L_INF L_EXR

Fixed regressors: C

Number of models evalulated: 16

Selected Model: ARDL(1, 1, 1, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_DT(-1)	-0.215308	0.155218	-1.387138	0.2377
L_MPR	-0.106928	0.046648	-2.292214	0.0837

L_MPR(-1)	-0.133724	0.051738	-2.584609	0.0610
L_M2	0.747138	0.367993	2.030304	0.1122
L_M2(-1)	-0.669679	0.343750	-1.948156	0.1232
L_INF	0.074440	0.162599	0.457814	0.6709
L_INF(-1)	0.270747	0.136103	1.989281	0.1175
L_EXR	-0.314435	0.147686	-2.129081	0.1003
C	2.632566	1.823185	1.443938	0.2222

R-squared	0.847011	Mean dependent var	2.091703
Adjusted R-squared	0.541032	S.D. dependent var	0.111203
S.E. of regression	0.075337	Akaike info criterion	-2.127737
Sum squared resid	0.022703	Schwarz criterion	-1.736618
Log likelihood	22.83029	Hannan-Quinn criter.	-2.208129
F-statistic	2.768199	Durbin-Watson stat	2.002882
Prob(F-statistic)	0.170323		

*Note: p-values and any subsequent tests do not account for model selection.

Dependent Variable: L_EFF

Method: ARDL

Date: 11/10/24 Time: 09:46

Sample (adjusted): 2011 2023

Included observations: 13 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): L_MPR L_M2 L_INF L_EXR

Fixed regressors: C

Number of models evalulated: 16

Selected Model: ARDL(1, 0, 1, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_EFF(-1)	0.591064	0.197361	2.994835	0.0242
L_MPR	-0.029679	0.050742	-0.584909	0.5799
L_M2	0.729021	0.431078	1.691158	0.1418
L_M2(-1)	-0.566936	0.460683	-1.230643	0.2645
L_INF	0.240627	0.214646	1.121042	0.3051
L_EXR	-0.364444	0.192631	-1.891923	0.1074
C	-0.074893	2.529163	-0.029612	0.9773

R-squared	0.829314	Mean dependent var	2.887676
Adjusted R-squared	0.658628	S.D. dependent var	0.195425
S.E. of regression	0.114181	Akaike info criterion	-1.198326
Sum squared resid	0.078224	Schwarz criterion	-0.894122
Log likelihood	14.78912	Hannan-Quinn criter.	-1.260853
F-statistic	4.858704	Durbin-Watson stat	1.868934
Prob(F-statistic)	0.037865		

*Note: p-values and any subsequent tests do not account for model selection.

Dependent Variable: L_ST

Method: ARDL

Date: 11/10/24 Time: 09:48

Sample (adjusted): 2011 2023

Included observations: 13 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): L_MPR L_M2 L_INF

L_EXR

Fixed regressors: C

Number of models evalulated: 16

Selected Model: ARDL(1, 0, 0, 1, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_ST(-1)	-0.444519	0.286061	-1.553933	0.1809
L_MPR	0.131798	0.219424	0.600654	0.5743
L_M2	-2.418061	0.757465	-3.192308	0.0242
L_INF	1.305780	0.874574	1.493048	0.1956
L_INF(-1)	0.792304	0.804372	0.984997	0.3699
L_EXR	0.590921	0.910724	0.648848	0.5451
L_EXR(-1)	1.162946	0.850139	1.367949	0.2296
C	28.48619	8.978920	3.172564	0.0247

R-squared	0.738356	Mean dependent var	1.955024
Adjusted R-squared	0.372055	S.D. dependent var	0.606651
S.E. of regression	0.480728	Akaike info criterion	1.648228
Sum squared resid	1.155497	Schwarz criterion	1.995889
Log likelihood	-2.713481	Hannan-Quinn criter.	1.576768
F-statistic	2.015708	Durbin-Watson stat	1.764240
Prob(F-statistic)	0.228833		

*Note: p-values and any subsequent tests do not account for model selection.

examine the influence of corruption level on financial development in Nigeria

Dependent Variable: L_AC
Method: ARDL
Date: 11/10/24 Time: 09:49

Sample (adjusted): 2011 2023
Included observations: 13 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): L_CORRUPTION
Fixed regressors: C
Number of models evalulated: 2
Selected Model: ARDL(1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_AC(-1)	0.988057	0.081512	12.12159	0.0000
L_CORRUPTION	0.000769	0.000472	1.628132	0.1346
C	0.011260	0.155066	0.072616	0.9435

R-squared	0.939389	Mean dependent var	1.917452
Adjusted R-squared	0.927267	S.D. dependent var	0.044062
S.E. of regression	0.011883	Akaike info criterion	-5.828234
Sum squared resid	0.001412	Schwarz criterion	-5.697861
Log likelihood	40.88352	Hannan-Quinn criter.	-5.855032
F-statistic	77.49346	Durbin-Watson stat	1.749574
Prob(F-statistic)	0.000001		

*Note: p-values and any subsequent tests do not account for model selection.

Dependent Variable: L_DT
Method: ARDL
Date: 11/10/24 Time: 09:50
Sample (adjusted): 2011 2023
Included observations: 13 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): L_CORRUPTION
Fixed regressors: C
Number of models evalulated: 2
Selected Model: ARDL(1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_DT(-1)	0.005949	0.285250	0.020857	0.9838
L_CORRUPTION	-0.007057	0.006020	-1.172246	0.2683
C	2.248268	0.498721	4.508068	0.0011

R-squared	0.209160	Mean dependent var	2.091703
Adjusted R-squared	0.050992	S.D. dependent var	0.111203
S.E. of regression	0.108330	Akaike info criterion	-1.408087

Sum squared resid	0.117355	Schwarz criterion	-1.277714
Log likelihood	12.15257	Hannan-Quinn criter.	-1.434885
F-statistic	1.322392	Durbin-Watson stat	2.073367
Prob(F-statistic)	0.309345		

*Note: p-values and any subsequent tests do not account for model selection.

Dependent Variable: L_EFF
Method: ARDL
Date: 11/10/24 Time: 09:52
Sample (adjusted): 2011 2023
Included observations: 13 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): L_CORRUPTION
Fixed regressors: C
Number of models evalulated: 2
Selected Model: ARDL(1, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_EFF(-1)	0.860848	0.188759	4.560572	0.0014
L_CORRUPTION	0.009311	0.004760	1.956244	0.0821
L_CORRUPTION(-1)	-0.016808	0.005156	-3.259535	0.0098
C	0.619732	0.402900	1.538178	0.1584

R-squared	0.860263	Mean dependent var	2.887676
Adjusted R-squared	0.813684	S.D. dependent var	0.195425
S.E. of regression	0.084354	Akaike info criterion	-1.859931
Sum squared resid	0.064040	Schwarz criterion	-1.686101
Log likelihood	16.08955	Hannan-Quinn criter.	-1.895661
F-statistic	18.46895	Durbin-Watson stat	1.949454
Prob(F-statistic)	0.000347		

*Note: p-values and any subsequent tests do not account for model selection.

Dependent Variable: L_ST
Method: ARDL
Date: 11/10/24 Time: 09:53
Sample (adjusted): 2011 2023
Included observations: 13 after adjustments

Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): L_CORRUPTION
Fixed regressors: C
Number of models evalulated: 2
Selected Model: ARDL(1, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
L_ST(-1)	0.588927	0.261244	2.254315	0.0506
L_CORRUPTION	-0.099974	0.029400	-3.400491	0.0079
L_CORRUPTION(-1)	0.043408	0.020665	2.100560	0.0451
C	2.273144	0.551466	4.122004	0.0026

R-squared	0.575654	Mean dependent var	1.955024
Adjusted R-squared	0.434205	S.D. dependent var	0.606651
S.E. of regression	0.456319	Akaike info criterion	1.516409
Sum squared resid	1.874041	Schwarz criterion	1.690240
Log likelihood	-5.856660	Hannan-Quinn criter.	1.480679
F-statistic	4.069699	Durbin-Watson stat	1.974540
Prob(F-statistic)	0.044097		

*Note: p-values and any subsequent tests do not account for model selection.

Explore the causal relationship among monetary policy, corruption level, and financial development in Nigeria.

Pairwise Granger Causality Tests
Date: 11/10/24 Time: 20:53
Sample: 2010 2023

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
L_MPR does not Granger Cause L_AC	12	1.55326	0.2765
L_AC does not Granger Cause L_MPR		0.85650	0.4648
L_M2 does not Granger Cause L_AC	12	2.35808	0.1649
L_AC does not Granger Cause L_M2		0.40720	0.6803
L_INF does not Granger Cause L_AC	12	0.08380	0.9205
L_AC does not Granger Cause L_INF		2.71383	0.1341
L_CORRUPTION does not Granger Cause L_AC	12	0.88317	0.4550
L_AC does not Granger Cause L_CORRUPTION		13.7770	0.0037
L_M2 does not Granger Cause L_MPR	12	1.78428	0.2365
L_MPR does not Granger Cause L_M2		0.55416	0.5978
L_INF does not Granger Cause L_MPR	12	8.27395	0.0143
L_MPR does not Granger Cause L_INF		1.18483	0.3604
L_CORRUPTION does not Granger Cause L_MPR	12	0.08708	0.9176
L_MPR does not Granger Cause L_CORRUPTION		2.14557	0.1876
L_INF does not Granger Cause L_M2	12	0.07775	0.9260
L_M2 does not Granger Cause L_INF		4.13272	0.0653
L_CORRUPTION does not Granger Cause L_M2	12	1.73390	0.2445
L_M2 does not Granger Cause L_CORRUPTION		7.82366	0.0164
L_CORRUPTION does not Granger Cause L_INF	12	2.30931	0.1697
L_INF does not Granger Cause L_CORRUPTION		0.96271	0.4272

Pairwise Granger Causality Tests
Date: 11/10/24 Time: 10:57
Sample: 2010 2023
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.

L_M2 does not Granger Cause L_MPR	12	1.78428	0.2365
L_MPR does not Granger Cause L_M2		0.55416	0.5978
L_INF does not Granger Cause L_MPR	12	8.27395	0.0143
L_MPR does not Granger Cause L_INF		1.18483	0.3604
L_CORRUPTION does not Granger Cause L_MPR	12	0.08708	0.9176
L_MPR does not Granger Cause L_CORRUPTION		2.14557	0.1876
L_DT does not Granger Cause L_MPR	12	0.49273	0.6307
L_MPR does not Granger Cause L_DT		1.58750	0.2701
L_INF does not Granger Cause L_M2	12	0.07775	0.9260
L_M2 does not Granger Cause L_INF		4.13272	0.0653
L_CORRUPTION does not Granger Cause L_M2	12	1.73390	0.2445
L_M2 does not Granger Cause L_CORRUPTION		7.82366	0.0164
L_DT does not Granger Cause L_M2	12	1.56433	0.2744
L_M2 does not Granger Cause L_DT		0.04826	0.9532
L_CORRUPTION does not Granger Cause L_INF	12	2.30931	0.1697
L_INF does not Granger Cause L_CORRUPTION		0.96271	0.4272
L_DT does not Granger Cause L_INF	12	2.05547	0.1985
L_INF does not Granger Cause L_DT		2.27352	0.1735
L_DT does not Granger Cause L_CORRUPTION	12	0.08524	0.9192
L_CORRUPTION does not Granger Cause L_DT		1.19275	0.3583

Pairwise Granger Causality Tests
Date: 11/10/24 Time: 10:58
Sample: 2010 2023
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.

L_M2 does not Granger Cause L_MPR	12	1.78428	0.2365
L_MPR does not Granger Cause L_M2		0.55416	0.5978
L_INF does not Granger Cause L_MPR	12	8.27395	0.0143
L_MPR does not Granger Cause L_INF		1.18483	0.3604
L_CORRUPTION does not Granger Cause L_MPR	12	0.08708	0.9176
L_MPR does not Granger Cause L_CORRUPTION		2.14557	0.1876
L_EFF does not Granger Cause L_MPR	12	0.02923	0.9713
L_MPR does not Granger Cause L_EFF		0.81845	0.4793
L_INF does not Granger Cause L_M2	12	0.07775	0.9260
L_M2 does not Granger Cause L_INF		4.13272	0.0653
L_CORRUPTION does not Granger Cause L_M2	12	1.73390	0.2445
L_M2 does not Granger Cause L_CORRUPTION		7.82366	0.0164
L_EFF does not Granger Cause L_M2	12	0.31767	0.7378
L_M2 does not Granger Cause L_EFF		3.19564	0.1033
L_CORRUPTION does not Granger Cause L_INF	12	2.30931	0.1697
L_INF does not Granger Cause L_CORRUPTION		0.96271	0.4272
L_EFF does not Granger Cause L_INF	12	1.16674	0.3653
L_INF does not Granger Cause L_EFF		0.35858	0.7108
L_EFF does not Granger Cause L_CORRUPTION	12	4.02183	0.0687
L_CORRUPTION does not Granger Cause L_EFF		4.15805	0.0645

Pairwise Granger Causality Tests
Date: 11/10/24 Time: 10:59
Sample: 2010 2023
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.

L_M2 does not Granger Cause L_MPR	12	1.78428	0.2365
L_MPR does not Granger Cause L_M2		0.55416	0.5978
L_INF does not Granger Cause L_MPR	12	8.27395	0.0143
L_MPR does not Granger Cause L_INF		1.18483	0.3604
L_CORRUPTION does not Granger Cause L_MPR	12	0.08708	0.9176
L_MPR does not Granger Cause L_CORRUPTION		2.14557	0.1876
L_ST does not Granger Cause L_MPR	12	1.54348	0.2784
L_MPR does not Granger Cause L_ST		3.11529	0.1077
L_INF does not Granger Cause L_M2	12	0.07775	0.9260
L_M2 does not Granger Cause L_INF		4.13272	0.0653
L_CORRUPTION does not Granger Cause L_M2	12	1.73390	0.2445
L_M2 does not Granger Cause L_CORRUPTION		7.82366	0.0164
L_ST does not Granger Cause L_M2	12	0.64113	0.5550
L_M2 does not Granger Cause L_ST		1.14989	0.3700
L_CORRUPTION does not Granger Cause L_INF	12	2.30931	0.1697
L_INF does not Granger Cause L_CORRUPTION		0.96271	0.4272
L_ST does not Granger Cause L_INF	12	1.55788	0.2756
L_INF does not Granger Cause L_ST		1.77672	0.2377
L_ST does not Granger Cause L_CORRUPTION	12	1.50037	0.2869
L_CORRUPTION does not Granger Cause L_ST		9.76386	0.0094

Dependent Variable: L_AC
Method: Least Squares (Gauss-Newton / Marquardt steps)
Date: 11/10/24 Time: 11:30
Sample: 2010 2023
Included observations: 14

L_AC = C(1) + C(2)*L_MPR + C(3)*L_M2 + C(4)*L_INF +
C(5)*L_EXR +
C(6)*L_CORRUPTION +
C(7)*INTERACTION_MPR_CORRUPTION +
C(8)*INTERACTION_M2_CORRUPTION +
C(9)*INTERACTION_INF_C
ORRUPTION

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-7.545820	14.56387	-0.518119	0.6265
C(2)	-0.108523	0.317039	-0.342302	0.7460
C(3)	0.530113	0.639447	0.829019	0.4449
C(4)	0.151812	1.793782	0.084632	0.9358
C(5)	0.130431	0.248629	0.524602	0.6223
C(6)	0.389090	0.725324	0.536436	0.6147
C(7)	0.004777	0.011836	0.403619	0.7032
C(8)	-0.023491	0.035966	-0.653161	0.5425
C(9)	-0.006931	0.069824	-0.099269	0.9248

R-squared	0.872450	Mean dependent var	1.914768
Adjusted R-squared	0.668371	S.D. dependent var	0.043508
S.E. of regression	0.025055	Akaike info criterion	-4.279387
Sum squared resid	0.003139	Schwarz criterion	-3.868565
Log likelihood	38.95571	Hannan-Quinn criter.	-4.317416
F-statistic	5.275058	Durbin-Watson stat	1.930407
Prob(F-statistic)	0.043154		

Bio-data

A. Personal Data

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B. Educational Background

Educational Institutions Attended with Dates and Qualification:

i. **Primary Education: Paradise Children School, Agbowa-Ikosi Lagos**

- Primary School Leaving Certificate 1996

ii. **Secondary Education:** National College Gbagada, Gbagada, Lagos

- West African School Certificate 2002

iii. **Higher Education Institution**:

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  Bachelor of Science (B.Sc.) Accounting 2014
- University of Lagos, Akoka, Lagos State
  Masters of Science (M.Sc.) Finance 2017
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D. Awards and Fellowships (if any): No

E. Membership of Academic Professional Bodies:

- Teacher Registration Council of Nigeria (TRCN)
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F. Publication if Any

1. Wahab, A. A. Impact of Pension Fund Investment on Capital Market Performance in Nigeria. Akoka Journal of Business Education (AJOBE), Volume 4, No. 1 (2023). Pg 38-55

2. Wahab, A. A. and Tashie, G. A. Impact of Government Expenditure and Inflation on Economic Growth in Nigeria. International Journal of Financial Research and Business development. Vol. 04 No. 7 April, 2024. MEJAIMR-2024-0102. E-ISSN: 1115-8530. P-ISSN: 3026-8958

3. Wahab, A. A. The Relationship Between Tax Management And Spending Pattern Of Public Sector In Sub-Saharan Africa. GSJ: Volume 7, Issue 11, November 2019, Online: ISSN 2320-9186

(a) Published Journals/Articles

Seminal Papers Accepted For Publication: None

Seminal Papers Presented At Conference: One

Thesis/ Dissertation: None

Books/Monographs: None

Major Conference / Workshop Attended:

a. International Conference of Accounting and Business 2024 (iCAB 2024) 27-28 June 2024. Sun City Resort, 0316, North-West Province, R556, South Africa. Impact of Money Supply and Exchange Rate on Economic Growth of Nigeria
b. 3rd National/ 1st International Conference of school of Business Education, FCE(T), Akoka. (27th - 30th October, 2021)
c. 3rd National Conference (Virtual) School of Vocational Educational, Federal College of Education (Technical), Asaba, Delta State. (22nd -25th June, 2021)
d. Integrating Digital Skills in Business Education Curriculum for Teacher Preparation in Tertiary Institution for Digital Economic Development presented at the 6th International Conference of the Faculty of Education, Lead City University, Ibadan, Oyo State, 25th – 27th July, 2023.

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The University Compliance Certification

This is to certify that this thesis was carried out by **Azeez Adebanjo WAHAB** with matric number **LCU/PG/003156** in the department of Management and Accounting, Faculty of Management & Social Sciences, Lead City University, Ibadan, in Full compliance with the approved University format and style.

Signature

Date