EFFECT OF MONETARY AND FISCAL POLICIES ON BANK CREDIT TO THE PRIVATE SECTOR IN NIGERIA.

BY

BENEDICT EBHODAGHE EHIDIAMEN

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CERTIFICATION

This is to certify that this research on the EFFECT OF MONETARY AND FISCAL POLICIES ON BANK CREDIT TO THE PRIVATE SECTOR was carried out by BENEDICT EBHODAGHE EHIDIAMEN with matriculation number SSC2105558 for the award of Bachelor of Science (B.Sc) degree in the Department of ECONOMICS, FACULTY OF SOCIAL SCIENCE, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA, under the supervision of the following persons;

Prof. S.E. EDO **Date**
(Project supervisor)

Prof. S.O. IGBINEDION **Date**
(project Coordinator)

Prof. C.A. IGHODARO **Date**
(A.g Head of Department)

DEDICATION

This research work is dedicated to God Almighty, whose mercies, grace and infinite wisdom have led me throughout the duration of this academic aspirations. It is also lovingly dedicated to my amazing parent, Mr. & Mrs. Ehidiamen, my siblings, Celestina and Gift Ehidiamen, and to Isa Mercy whose unwavering prayers, support and encouragement have been the root of my academic journey.

It is also dedicated to friends who have in ways inspired me to persevere even in stormy situations, I owe gratitude. This accomplishment is as much yours as it is mine.

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ABSTRACT

The research objective was to investigate how variations in Bank credit to private sector are attributed to monetary and fiscal macroeconomic policies between 1990 and 2023 to inform policy interventions. Quantitative approach was adopted with data sourced from the CBN statistical bulletins. The research employed the use of the Autoregressive Distributed Lag (ARDL) Model to empirically analyze both short and long run dynamics. The Augmented Dickey-Fuller Unit root test was conducted to determine the stationarity of variables in the study. It was established that the data was a mix of I(0) and I(1) variables indicating that some variables were stationary at levels I(0) while others were stationary after first differencing I(1). Findings revealed that a mixed short run effect exist between both policy instrument and bank credit to private sector. The study revealed that initially, a percentage increase in both policies significantly increase bank credit to private sector but over time, this expansion causes negative changes in credit availability and cost. In the long run, it was observed that these macroeconomic policies exert significant positive change on bank credit. While these policies have positive effect on credit, their interaction negatively and significantly affect credit growth implying that these policies are complementary. The negative significant effect proves that on the average, an increase in government expenditure worsens the negative impact of interest rate which crowds out private sector investment through credit crunch. While these policies positive and significant affect bank credit to the private sector as standalone policies, their interaction posits the joint

effect and therefore, it is recommended that an accommodating policy environment is a sine qua non for enhancing financial deepening through private sector credit in the Nigeria economy. Therefore, an expansionary fiscal environment while prioritizing productive investments should be accompanied by a moderate monetary environment

CHAPTER ONE

INTRODUCTION

1.1 Prelude

One of the biggest forces behind economic growth and development is an improved financial climate. An Increase in the amount of income and investment has been linked to an improved credit system and also, it improves the use of production capacity. Reduced poverty, higher per capita income, and consequently economic growth are the end results. The necessity for shifting development strategies to encourage private sector investment has been generally emphasized in many developing countries of the world. This is mostly due to the private sector's capacity for economic growth due to its adaptability, flexibility, and regenerative tendencies. Over the years, the private sector has been seen as the foundation of industrialization based on its expected impact and potential contributions towards a diversified production base. Its accelerative effect tends to gear towards achieving macroeconomic objectives such as full employment of resources, equitable income distribution, improved balance of payment, development of local or home technology as well as diffusion of management skills and steering indigenous entrepreneurship. This argument becomes very strong since most developing countries of Africa have for more than four decades tried public sector driven economic development with little or no success.

Historically, Nigeria's economic path has been heavily characterized by the instability of oil revenues which was source of Nigeria's dependent revenue, molding both fiscal and monetary policy environment. The oil boom period of the 1970s propelled expansive government spending, which often have limited regard for efficiency of government spending or its long-term sustainability, while subsequent fall in oil price and rising government deficit and debt triggered

severe economic contractions and structural adjustment programs (SAPs) in the 1980s (Tomori, 1994; Lewis, 2007). This dependence propelled a macroeconomic environment prone to instability, characterized by fluctuating exchange rates, and recurring fiscal deficit. Such instability inherently increases risk perceptions within the banking sector, making lenders cautious about providing credit environment, especially long-term loans essential for private investment. Bank credit to the private sector plays a vital role in driving economic growth by supporting business investment, home purchases, and entrepreneurial innovation. The accessibility and affordability of this credit are largely shaped by two major macroeconomic tools: monetary policy, managed by central banks, and fiscal policy, directed by governments. Monetary policy focuses on controlling interest rates and the money supply, while fiscal policy deals with government spending, taxation, and borrowing. These policies jointly influence the lending landscape, determining the volume and conditions under which banks extend credit.

Monetary policy has been defined by many authors. It is generally regarded as a policy instrument of the central bank, which it uses to regulate money supply in the economy through such measures as Monetary Policy Rate (MPR) which is the rate the central bank lends money to commercial banks, Cash Reserve Ratio (CRR) which is the amount commercial banks must keep as reserve with the central bank (usually a percentage of the total monetary equity in terms of deposit liabilities of a bank), Open Market Operations which involves the sales of government Bonds and Securities. These measures are aimed towards achieving target macroeconomic objectives. Most governments try to control the rate of growth of money supply because of the link that it has on the rate of inflation. Monetary policy plays an important role in structuring the operational environment for banks, either by facilitating or restricting their activities (Udeh, 2015). This is usually done through policies that controls the volume and availability of money

in an economy. There is a strong interconnectedness between monetary policy and deposit money banks, and the effectiveness of the banking system especially in lending (Jegede, 2014). Understanding how bank credit responds to monetary policy changes is important, as these adjustments influence the industry's efficiency and performance (Jordi, David & Javier, 2002).

Fiscal policy on the other hand is a tool of the government which it uses to control its revenue and spending activity in an economy. It refers to government's approach to regulating economic activities through spending, taxation, and borrowing, with the aim of impacting aggregate demand, output, and employment levels. It involves systematic management of government financial resources to meet specific broader economic objectives, such as accelerating economic growth (Medee and Nembee, 2011). Olawunmi and Tajudeen (2007) highlighted that traditionally, fiscal policy has been linked to the application of taxes and public spending to affect economic activity levels (2002). As stated by Arthur Smithies, fiscal policy utilizes government revenues and expenditures to achieve positive outcomes while steering clear of negative consequences. The fiscal policy environment in Nigeria has been one with challenges. Persistent budget deficits, driven by unstable oil revenues, far reaching expenditure programs, and sometimes inefficient public expenditure, have over the years warranted the significant increase in domestic borrowing. The issuance of government securities (Treasury Bills, Bonds) gives banks an avenue for a highly liquid, low-risk (mostly seen as risk free) investment alternative. This facilitates the" crowding out" effect, where by increased government domestic borrowing soak up available loanable funds, which invariably raises bank credit lending rates thereby discouraging private borrowing and therefore redirecting credit away from the private sector (Umaru & Zubairu, 2017; Ebiringa & Anyaogu, 2014). It has been observed in most cases

that Alhaji Aliko Dangote, Africa's richest man, has repeatedly highlighted the unfavorable impact of high interest rates resulting partly from government borrowing on Nigerian businesses.

Despite these policy efforts, credit to private sector growth in Nigeria has remained insufficient and open to instability. The ratio of credit to private sector (CPS) to GDP has often been behind other developing economies and has been below levels which is generally considered as necessary for a robust and sustainable economic development (World Bank Global Financial Development Database; CBN, 2022). Credit growth is often hindered by structural and institutional shortcomings. Recent years have also introduced additional levels of difficulty. The COVID-19 pandemic came with it, severe economic disturbance, which brought the attention of the CBN to the need for an introduction of targeted interventions like the Loan to Deposit Ratio (LDR) policy and credit support facilities (CBN, 2020 Circulars). Still, the result was a rising inflation, which prompted major monetary tightening cycle with aggressive MPR hikes from 2022 onwards (MPR reaching 26.25% by mid-2024) alongside sustained high Credit Reserve Ratio (CBN MPC Communiques, 2022-2024). The controversial Naira redesign policy of late 2022/early 2023 propelled severe cash shortages, further disrupting economic activity and credit flows (IMF, 2023). These events call attention to the dynamic and often challenging environment within which monetary and fiscal policies operate and attempt to stimulate private sector credit.

It is therefore a necessity to grasp the interconnectedness between these policies and their inherent impact on bank credit to the private sector in the face of Nigeria's unique context, regulatory barriers, and recent economic shocks, is not just suitable but rather, a necessity for designing strategically effective frameworks to unlock finance for sustainable and all-round growth. This study seeks to build upon this complex background to provide much-needed clarity.

1.2 Statement of research problem

Over the years, irrespective of concerted efforts by the government to accelerate the rate of economic growth, structural development and attainment of progressive economic welfare, the Nigerian economy remains characsterized by rising and significant rate of unemployment, high cost of living, social and environmental unrest, poverty, low gross domestic capital formation, which are all characteristics of an underdeveloped or developing economy. Since attaining independence in 1960, the Nigerian economy been struggling to achieve sustainable economic growth and development. The rather poor expansionary performance of the Nigerian economy over the years is often as a result of the ineffectiveness of monetary and fiscal policy undertaken.

An essential machinery of economic growth and development is a robust private sector investment, which is heavily reliant on ease of access and affordability of bank credit (Levine, 2005; Beck & Demirguc-Kunt, 2009). Bank credit to the private sector (CPS) creates an enabling environment for capital formation, entrepreneurship development, innovation, and employment opportunities which reduces the rate of unemployment, acting as a vital transmission channel for economic development (King & Levine, 1993). In the Nigeria experience however, the flow of credit to the private sector has remained persistently constrained and often erratic, unstable and volatile, failing to meet the financing needs of investors and businesses, particularly Small and Medium Enterprises (SMEs), which form the backbone of the economy (Adegboye, Osabuohien, & Olokoyo, 2020; CBN, 2022). The central Bank of Nigeria (CBN) which is the apex bank in the country serves as the monetary authority in the country. Through its monetary policy, and the Federal Government, via fiscal policy, utilize a variety of instruments to influence economic activity, particularly the cost and accessibility of credit. These instruments are either to expand or

contrast i.e. increase or reduce the rate of economic activities in order to control the overall economy. Monetary policy instruments such as the Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR), Liquidity Ratio (LR), and Open Market Operations (OMO) are often than more times employed to regulate liquidity, control inflation, and direct banks' lending behavior (CBN Act, 2007). On the other hand, fiscal policy through government spending, taxation, and borrowing affects aggregate demand, public debt levels, and the broader macroeconomic environment, thereby shaping how banks evaluate or appraise risk and their willingness to extend credit (Aisen & Franken, 2010).

Iyoha and Itsede (2003) in "the structure of the Nigerian economy" revealed that the Nigeria experience between the year 1964 to 1981 was a significant economic growth, with per capita income consistently rising from $120 to $780, marking a remarkable increase of about 550%, indicating an average annual growth rate of 32.3%. This trend though positive and favourable did not continue. From 1981 to 1997, there was a notable decline in per capita income, which fell sharply to $280, representing a decrease of 64.1%, with an average annual decline of 4%. Had Nigeria maintained the earlier growth momentum beyond 1981, its per capita income could have potentially reached around $1,279 by 1997. The actual shortfall of nearly $1,000 per person illustrates the economic impact of ineffective fiscal policy decisions on the typical Nigerian.

Irrespective of years long of policy implementation, Nigeria is still plagued with significant shortfall in credit availability. The financial cost of obtaining loanable funds is often quite high, the expansion of credit to private businesses tends to fluctuate substantially, and banks still hold a considerable amount of their resources in government bonds instead of lending to the private sector for productive activities (NBS, 2023; IMF, 2023). This inconsistency highlights concerns on how well monetary and fiscal strategies are working, how they impact the economy, and how

they interact in terms of policy mix to promote consistent growth in credit availability to private enterprise within Nigeria's context.

The research problem forming the core research gap is **Policy Interaction and Coordination Challenges.** Monetary and fiscal policies are in most cases rarely applied independently. Expansionary fiscal instrument such as increase budget deficits (i.e., when government spending surpasses revenue) may clash with contractionary monetary policies (e.g., increased interest rates) aimed at controlling inflation. This policy inconsistency can send mixed signals to financial institutions and contribute to an unpredictable business environment (Ogun & Akinlo, 2014). The nature and consequences of such policy interactions on banks' credit allocation to the private sector remain inadequately understood and insufficiently explored within the Nigerian context.

Indeed, it has been argued in the literature that inappropriate monetary policy and constraints on fiscal policy can deteriorate the economy of a country.

1.3 Research questions

The following questions are raised to be enable us address the gap as identified.

1. Does monetary policy have any impact on bank credit?
2. What is the effect of fiscal policy on bank credit?
3. What is the combined effect of monetary and fiscal policies on bank credit?

1.4 Objective of the study

The broad objective of this study is to investigate the interconnectedness between policy instruments (monetary and fiscal policies) and bank credit to the private sector in Nigeria.

The specific objectives are:

a. To investigate the effect of monetary policy (Interest Rate) on bank credit.

b. To examine the impact of fiscal policy (government expenditure) on bank credit to private sector.

c. To analyze the combined effect of monetary and fiscal policies on bank credit to private sector.

1.5 Hypothesis of the study

The research hypotheses that would guide this study is therefore stated as follows:

i. Ho: There is no significant relationship between monetary policy and the availability of credit to private sector.

ii. Ho: Fiscal policy has no significant impact on bank credit to private sector.

iii. Ho: The effect of the interaction between monetary and fiscal policy is not statistically different from zero.

1.6 Significance of the study

Bank credit to the private sector facilitates private investment. Private investment has been seen as an essential characteristic to sustainable economic growth and development of any developing economy. In any economy, the volume and cost of bank credit is dependent on the interplay of macroeconomic instruments of the government (Fiscal policy) and the monetary authority (Monetary policy) usually the central bank in the economy. Understanding the precise framework, resourcefulness and effectiveness of monetary and fiscal policies in boosting bank credit to the private sector (CPS) in Nigeria holds deep significance for multiple stakeholders, economic agents, policy makers and the nation's broader socio-economic growth path. At its core, this study addresses a fundamental question: How does monetary and fiscal policies influence bank credit in Nigeria? By examining this question, researchers and policymakers gain invaluable insights into the effectiveness of monetary and

fiscal policies and bank credit availability in combating insufficient credit which serves as hindrance to private sector investment and its associated accelerated growth and development mechanism. This study aims at aiding critical contributions across several dimensions, informing evidence-based policy formulation (Policymakers – CBN & Federal Government). The findings aim to provide the Central Bank of Nigeria (CBN) with rigorous empirical evidence on the actual impact of its monetary instruments (MPR, CRR, LR) on the volume (availability), cost, and distribution of credit. This is crucial for setting policies to achieve planned objectives without unplanned consequences like restricting credit or worsening financial uncertainty (Bernanke & Gertler, 1995; Mishkin, 2007). Ascertaining how an aggressive Cash Reserve Ratio (CRR) hikes can seriously tighten Small & Medium Enterprise (SME) lending or simply push banks towards government securities is essential for future liquidity management decisions.

Also, the evidence from the "crowding-out" effect of private investment resulting from government domestic borrowing is indispensable for designing stable debt management strategies and fiscal combination plans that help minimize the displacement of private investment, thereby amplifying a more conducive environment for private sector growth. Analyzing the interplay between monetary and fiscal policies addresses a critical gap. Evidence on how conflicting indicators e.g., expansionary monetary policy alongside contractionary fiscal policy (most especially in terms of a balance of payment surplus and a rising inflation) impact bank lending confidence and credit flow (Ogun & Akinlo, 2014) can foster better harmonization between the CBN and the Federal Government. Improved coherence is very vital for reducing policy uncertainty which is a major hindrance to private investment (Baker, Bloom, & Davis, 2016) and achieving macroeconomic stability which

serves as a prerequisite for sustained credit growth. The private sector, especially Small and Medium Enterprises (SMEs) which are essential for employment and economic advancement (Adegboye et al., 2020; Beck & Demirgüç-Kunt, 2009), suffers most from credit limitations. By identifying the policy instruments and structural obstacles that limits the accessibility and affordability of credit, the study provides empirical evidence to advocate for targeted initiatives. In the long run, enabling greater and more efficient credit to private sector flow is essential to unlocking private sector potential, driving domestic capital formation, enhancing entrepreneurial advancement, creating employment opportunities, and achieving an overall inclusive economic growth (King & Levine, 1993; Levine, 2005).

The study also aims at contributing to the broader theoretical discourse on the bank lending channel of monetary policy and the credit channel of fiscal policy in developing economies characterized by structural rigidities, shallow financial markets, and organizational limitations (Mishkin, 1996; Aisen & Franken, 2010). By bridging critical knowledge gaps, it holds the potential to contribute significantly to designing more effective, growth-focused monetary and fiscal policy frameworks for Nigeria's sustainable development.

1.7 Scope of the study

This study will comprehensively analyze the relationship between monetary policy, fiscal policy, and bank credit to the private sector (CPS) in Nigeria over a thirty-four-year period, spanning from 1990 to 2023. This timeframe is chosen to capture critical phases in Nigeria's economic policy evolution and structural shifts, providing sufficient longitudinal insight for solid empirical analysis while incorporating the most recent developments. This defined scope allows for a focused, empirically tractable investigation into the core research problem, the impact of monetary and fiscal policy instruments on bank credit to the private sector over

a period encompassing Nigeria's move to a deregulated financial system, structural improvements, economic shocks, and the latest policy adjustments. It balances historical depth with contemporary relevance, clearly utilizing available national data source (CBN) while clearly defining boundaries to ensure analytical feasibility.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The complex interaction between monetary policy, fiscal policy, and bank credit to the private sector is essential in shaping economic growth and development, financial stability, and the ease of accessibility of credit. Over the years, researchers have extensively examined the level of impact central bank interventions and government budgetary actions exact on the lending behavior of financial institutions. The interplay between monetary and fiscal policies shapes credit outcomes. When policies synergize (e.g., expansionary fiscal and accommodative monetary policy), credit growth accelerates collaboratively (Dell'Ariccia et al., 2018). Irrespective of these outcomes, the instruments, volumes, and interconnectedness remain contested. This review synthesizes empirical evidence on these relationships, highlighting consensus, different contradictions, and research/literature gaps.

2.2. Theoretical Literature Review

Monetary and Fiscal policies are two key macroeconomic measures through which the government and the monetary authority (CBN) influence or control economic activities in order to achieve predetermined economic goals and objectives. How these policies affect bank credit provision to the private sector and businesses is a very important measure which influences real sector activities.

Evidence abounds on the theoretical contributions of the interaction between fiscal and monetary policy instruments. Monetary and fiscal policies are complimentary instruments for steering the developmental objectives of the economy. Literature asserts that both fiscal and monetary

policies should be viewed as an integrated whole rather than in isolation. Conversely, policymakers can combine both monetary and fiscal policy instruments in optimal proportions to achieve predefined macroeconomic objectives. (Tinbergen,1952; Theil, 1957). A close interaction of both policies has significant effect on the volume of credit to the private sector through the banking sector which acts as the primary channel for financial intermediation bridging the gap between the surplus sector of the economy and the deficit sector of the economy. This close interaction is a vital focus of macroeconomic theory. Its influence on bank credit is deeply rooted in the Keynesian, Monetarist and Post Keynesian economics, with each having a distinct perspective on the mode of effect of the policy variables.

This literature therefore explores various channels through which these policies influence banks' lending behavior and therefore, credit availability for private investment and economic activity.

On the path of policy interaction, two main theories exist; The Monetarist Arithmetic (Sargent & Wallace, 1981; McCallum,1984) and the Fiscal Theory of Price Level (Leeper, 1991; Sims 1994, 1999; Woodford,1995, 1996, 2001).

Sargent and Wallace's (1981) Unpleasant Monetarist Arithmetic allude that the interaction between fiscal and monetary policy can be likened to a Stackelberg game, where in a fiscally dominated regime, the leader (fiscal policy) dominates with full knowledge of the follower's (monetary policy) decision criterion and the follower reacts after observing the leader's direction. This dominance can undermine the Monetary Authorities ability to check inflation and stabilize prices. They built their model on a monetarist Overlapping Generations framework. In this framework, the government's budget deficit is exogenously determined, influencing the monetary authority to finance deficits by creating money when the issuance of government's

bonds and T-Bills becomes insufficient or constrained by high debt levels. This increases money supply, raising inflation per the quantity theory of money. This theory relates to credit such that, in a fiscally dominant regime, the need of the central bank to monetize deficits leads to the crowding out effect of private sector credit. Theoretically, the most significant assertion for the negative impact of fiscal policy on bank credit is the crowding out effect. This occurs when increased government borrowing reduces the availability of funds for the private sector. The classical crowding out argument assumes an economy operating at full employment where investment and savings react sharply to changes in interest rate (Sineviciene & Vasiliauskaite, 2012). The classicals opined that, active participation of government in the economy by financing its deficit through domestic borrowing will put demand pressure on loanable funds thereby increasing rate of interest and making private borrowing more expensive. The implication therein is that, as a result of excessive government borrowing which drives up interest rates, businesses are discouraged from expanding which affects output in the long run (Gerrard, 1996; Sineviciene & Vasiliauskaite, 2012). It is of the opinion of the classicals that despite the fact that government intervention in the economy has an impact on output, such impact is only temporary and in the long run, its negative side effect of crowding out private investment does more harm to the economy than good, thereby, rendering fiscal policy ineffective and self-defeating (Gerrard, 1996). Higher rates as a result of increased government borrowing tend to increase the opportunity cost of banks' lending in the sense that, as a result of higher interest rates, commercial banks appetite to give out loans may be hindered if it sees that it is more profitable buying high yielding government bonds and Treasury Bills. This facilitates diversion of credit away from the private sector. This effect is what has come to be known as the crowding out effect of the financing side of government expenditure. The extent of the effect

depends on the position of the economy. In this regard, if the economy is below full capacity i.e. when some factors are left unused, an increase in demand might stimulate credit by encouraging business to expand its operations and employ more labor. Conversely, when the economy is at full capacity, when all resources are fully utilized, crowding out of private investment dominates. In this case, banks prioritize holding government securities over lending to households and firms, reducing the volume of loanable funds available to household and businesses. High inflation from money creation further erodes real credit demand and tightens lending standards, constraining private sector borrowing and investment, particularly for SMEs.

Unlike the Monetarist, Woodford (1995) and others who popularized the Fiscal Theory of Price Level posits that fiscal policy is the major driver of price level in an economy and that the budget directly impacts price level free from any monetary channel further supporting the assertion of Leeper (1991) active-passive category. The study highlights the locus of fiscal and monetary policy that uniquely determines equilibrium price level in the economy. Following Leeper's classification, the theory modeled the interaction as an active and passive game such that fiscal policy assumes the active category and monetary policy is passive to uniquely price level. In an active fiscal regime, fiscal incentives can crowd in private sector credit by enhancing the absorptive capacity of the economic, encouraging bank lending. The Keynesian crowding in theory assumes the short run, underemployment output level and disequilibrium in the economy, a case where aggregate demand falls short of aggregate supply indicating suboptimal productivity. It also assumes that due to this excess unutilized capacity (labor or capital), savings and investment are interest inelastic indicating that investment and savings is not significantly affected by the level of interest rate in the economy (Sineviciene & Vasiliauskaite, 2012). The theory argues that, an expansionary fiscal policy which can be an increase government spending

or reduction in taxes exert direct influence on aggregate demand and economic activity (Blinder & Solow, 1973). This theory is often stressed from the public expenditure side and this is because, it stimulates the absorptive capacity of the economy by increasing the purchasing power of the citizens. As a result, an increase in demand improves industry turnover and increases profitability making them more legible borrowers. Keynes postulated that a fiscal expansion (lowering taxes) will create income for people and stimulate investment in the economy which will further lead to the creation of more income in the economy. He opined that fiscal expansion had the tendency to expand the market for private sector products through the fiscal multiplier. Government investment in specific sectors can complement private sector activities by creating an enabling environment for private sector to thrive thereby creating new opportunities and increasing the demand for private financing.

Several channels have also been identified in theory through which monetary policy influences bank credit to the private sector

The Interest Rate Channel also known as the Traditional View channel of monetary policy transmission originates from the Keynesian traditional view of monetary policy transmission. According to Keynes, actions undertaken by the central bank directly affects the prevailing market interest rate in any economy indicating that a change in central bank's policy rate directly exert influence on other interest rates in the economy. Keynes posits that, when the central banks adopt an expansionary monetary policy, it triggers a reduction in real interest rates thereby reducing borrowing cost for banks, allowing them to extend lower lending rates to private sector and also allowing economic agents and businesses to attract credit from commercial banks at lower interest rates invariably encouraging investment and consumption. Accordingly, the loanable funds theory posits that, lower funding costs serves as an incentive to financial

institutions to expand their loan supply at lower interest rates, thereby stimulating credit demand from firms and households (Mishkin, 1995). This surplus funds in the economy as a result of monetary loosening stimulates investment and subsequently increase output growth in the economy. Schematically, this scenario is presented in accordance with Mishkin (1995)

EXP ⇑⇒ INT. RATE ⇓⇒ INVESTMENT ⇑⇒OUTPUT ⇑

According to the scheme, when there is an expansionary monetary policy (EXP), this creates lower interest rates as the commercial banks rate for borrowing to the public now become less expensive. The impact of this reduced cost of fund flows down to households and businesses indirectly making it easier for them to attract funds from financial institutions. This accelerates the rate of investment in the economy thereby leading to an increase in output of the economy.

On the other hand, contractionary measures raise funding costs for financial institutions, leading to higher lending rates, reduced credit demand by households and businesses and potentially tighter credit supply as banks ration loans (Stiglitz & Weiss, 1981). The assumption here is that there is perfect substitution as commercial banks can alternate between lending to the private sector or buying government bonds and bills. When contradictory measure is adopted by the monetary authority i.e. raising policy rates to control inflation, credit becomes expensive as commercial banks have to pay more to borrow reserves. This leads to higher lending rates. This surge in lending rate means that economic agents will have to reduce their investment spending since the cost of obtaining the needed credit has increased. In turn, this reduces demand for credit and invariably slows down economic and productive activity (Bernanke & Blinder, 1988).

The Bank Lending Channel (Credit View)

A contemporary theoretical contribution is the bank lending channel often referred to as the credit channel theory of monetary policy transmission. The prevailing argument is that monetary and fiscal policies can influence the supply side of credit through bank balance sheets and borrower net worth and not just the demand side. This supply side of credit hinges on reserves of the central banks. The assertion here is that, when monetary authorities employ a contracting cash reserve ratio policy, loanable funds available to the commercial banks widens invariably increasing their lending capacity to the private sector. When the monetary authority (CBN) increases or reduces reserve requirements, banks hold larger or lower fraction of their deposits as reserves. An increase in reserve requirements tighten the volume of loanable funds available to the commercial banks, while a decrease in reserve requirements increases the volume of loanable funds available to commercial banks for lending to the private sector. An increase constrains the ability of banks to create new loans while a decrease frees up more credit for lending. According to Mishkin (1995), expansionary policy creates credit booms in deposits available to the commercial banks. This translates to an increase in banks propensity to extend loans. Accordingly, Kashyap & Stein (2000) explained that, contractionary policy drains reserves, which forces banks with less liquid assets or weaker capital positions to reduce lending more sharply than implied by the interest rate channel alone.

The bank lending channel theory unlike the interest rate channel theory whose root is embedded on economic agents drive to borrow emphasizes the volume of loanable funds available to financial institutions. The theory is more about how much financial institutions have in funding to extend as credit. This channel is greatly influenced by two main policy instruments of the monetary authority, the Cash Reserve Ratio (CRR) and the Open Market Operations (OMO).

When monetary policy tightens, increased interest rates and reduced asset prices weaken bank balance sheets, leading to reduced credit supply to individuals, households and businesses. Investment opportunities nosedive and output follows same route.

The Financial Accelerator Model Theory

This theory explains the amplified level of impact small shock in the financial market have on real economic activities, particularly investment and credit flows to households and businesses. The model was developed by Bernanke, Gertler and Gilchrist (1999) and it is an extension of the credit channel theory of monetary policy transmission. The amplification effect occurs through feedback mechanism involving the borrowers net worth, his asset prices, and the risk perception of financial institutions. This theory highlights the effect monetary and fiscal policies has on bank credit through their collective and individual influence on lenders expectations, risks appetite, and the cost of obtaining capital.

The core principle vital to the financial accelerator model is the concept of External Finance Premium (EFP) which is the additional cost a firm is liable to pay to lenders of credit when it finances its investment externally (through loans) other than using its own retained earnings from operating profit. This additional premium on loans has an inverse relationship with the perceived ability of the borrower to pay back the loan, which is in turn influenced by their net worth, asset prices, and future income expectations. This means that, as the net worth or an individual or businesses falls as a result of a negative economic shock, the cost of obtaining loanable funds increases as they now appear riskier to financial institutions and lenders. This increase cost of credit (loanable funds) which causes investment and productive capacity to decline.

Schematically this theory can be shown below.

Net Worth ⇓⇒ Credit ⇓⇒ Investment ⇓⇒ Output ⇓⇒ Asset prices ⇓

This feedback mechanism is the financial accelerator.

It is represented mathematically as; external finance premium (EFP) as an inverse function of the borrower's net worth.

EFP = f(1/NW)

As Net worth (NW) falls, External Finance Premium (EFP) rises, increasing the cost of obtaining loanable funds from financial institutions. The model is typically embedded in a Dynamic Stochastic General Equilibrium (DSGE) framework to simulate how shocks propagate through the real economy via financial channels (Bernanke, Gertler and Gilchrist (1999).

Essentially, theoretical literature provides a convenient background for understanding the workings of monetary and fiscal policies and how it influences bank credit to the private sector. It established that monetary and fiscal policies exert multifaceted and often interdependent influences on bank credit to the private sector. Monetary policies focus is directed towards manipulating interest rate, bank lending, and money supply dynamics, affecting both the demand and supply side of credit availability and its volume in the economy. Fiscal policies influence is often analyzed on its dual characteristics of crowding out or crowding in effects of private investment, depending on how government borrowing impacts interest rates and total aggregate demand. Ultimately, the exact and precise impact is subject to the specific policy instruments adopted in the economy, the structure and what's attainable of the financial system, the prevailing economic conditions, and the expectations of economic agents. Understanding these theoretical underpinnings is essential for designing and implementing policies that will effectively enhance private sector access to finance, especially in emerging economies with

underdeveloped financial systems. Policymakers therefore must put into consideration these and other theoretical underpinnings when designing and implementing strategic policies to ensure there's sustainable growth and development in the credit and private sector of the economy.

2.3 Empirical literature Review

Empirical studies examining the effect of monetary and fiscal policies on bank credit to the private sector provides invaluable insights into the effectiveness of monetary and fiscal policy instruments in stimulating bank loans, it's volume and affordability in the Nigeria economy which stimulates private sector participation in productive economic activities in the economy. Several research has explored this relationship although mostly in isolation across different context, using various methodologies, and data sources to access the link between monetary policy, fiscal policy and bank credit.

Gilksberg (2016), applying Leeper's (1991) classification, numerically examined the simultaneous arrangements and combination of fiscal and monetary policies that ensure a unique solution to a dynamic general equilibrium model. The analysis revealed that there were three possible forms in which the interaction of fiscal-monetary instruments help achieve a distinctive rational equilibrium expectation. These forms include; active fiscal and passive monetary, active monetary and passive fiscal, and a passive fiscal and passive monetary combinations. This study further underscores the joint applicability of these macroeconomic policy instruments.

Huang et al (2021) in their study, analyzed the combined influence the instrument of monetary and fiscal policy exerts on SME lending in China. The analysis showed that monetary policy had more significant effect on SME financing as against fiscal policy instruments. A restrictive policy instrument (Monetary), commonly designated by an increasing policy (interest) rate, was found

to exert significantly influence in reducing SME lending. On the other hand, fiscal policy was found to have had relatively weaker influence on SME lending. The findings imply that the Central Bank had a significantly higher and more direct influence on SME financing compared to fiscal authorities. Similarly, Loučanová et al (2022); Peñarroya-Farell et al (2023) explored the dynamic nature of the specific influence of fiscal and monetary policies and how it stimulates credit markets, noting that policies of the fiscal and monetary authorities to engineer economic activity can ease credit lending rates to households and businesses invariably engineering improvements in the credit facility for SMEs. This finding underscores the important role of government policies and its ability to address credit limitations experienced by SMEs, thereby supporting their growth.

Similarly, Rakshit et al (2022) observed that structural and economic rigidities (high collateral, high interest rates, and complicated loan application procedures) limits credit access for SMEs. Small and Medium Enterprises (SMEs) are major components of a developing economy. Easy credit application process and lower cost of credit are the center focus of this analysis, emphasizing the need to support SME growth and development.

Shabbir (2012) investigated the effectiveness of the balance sheet channel of the monetary transmission mechanism in Pakistan, following the theoretical framework of Bernanke and Gertler (1995). Using data of non-financial listed firms over a period of 1999 –2010 to investigate the effectiveness of the balance sheet channel of monetary transmission mechanism in Pakistan. The analysis found strong statistically significant evidence for the existence of the balance sheet channel, specifically the net worth channels in Pakistan. A tight monetary policy (e.g., higher interest rates) reduces firms' net worth which limits their ability to borrow and invest.

Andreas (2001) investigated how German bank lending react to monetary policy measures. Using dynamic panel estimations with individual balance sheet data from all German banks. The resulting evidence showed that the average bank reacts more sharply to a restrictive monetary policy measure that lowers its ratio of short-term interbank deposits to total assets by reducing its lending activity. The results showed that banks that have less quick access cash in short term deposits with other banks tend to reduce lending almost instantaneously when monetary policy becomes contractive/restrictive. This implies that these banks are very sensitive to changes in monetary policy.

Okorie (2013) investigated through an error correction model, the impact of private sector credit on private domestic investment in Nigeria using time series data and the error correction model technique. The study revealed that increase in private sector credit led to increase in private domestic investment. The empirical result shows that a one million naira increase in private sector credit leads to six hundred thousand Naira increase in private investment i.e. a 1% increase in private sector credit leads to 0.6% increase in private domestic investment in Nigeria. These findings revealed a statistically significant relationship between credit availability and it's influence on private domestic investment in the economy.

Aliyu and Yusuf (2013) analyzed how private sector credit influence the real sector of Nigeria. Employing multiple regression model in the analysis, the study revealed that there is a positive significant influence of credit to private sector on the real sector of Nigeria suggesting that the overall performance of the real sector in the economy is greatly influenced by credit to private sector. This research further asserts the invaluable effect of credit availability in the economy.

Murty, Sailaja and Demissie (2012) investigated the long-run impact of bank credit on economic growth in Ethiopia using evidence from Johansen's multivariate co-integration approach analyzed by an error correction model. The findings showed that there exists a significant long-run relationship between bank credits and economic growth in Ethiopia. It therefore concludes that efficient mechanism for resource allocation and domestic capital accumulation enhances bank credits which positively influenced economic growth in Ethiopia.

Ezeaku (2014) examined how bank credit impact economic growth in Nigeria from the period 1987 to 2012 using OLS regression econometric technique in analyzing the data. The findings showed that there exists a positively significant impact on economic growth by aggregate bank credit over the range of period studied. The study therefore recommended that policies on government borrowing and spending should be reviewed in other to discourage credit leakage, curtail unproductive investment spending and that more credit be channeled into subsectors with more evident linkage effect such as agriculture, manufacturing, energy and infrastructural development.

Another empirical review is Teriba, A. (2018) who explored Monetary Policy evolution, challenges and the way forward in Nigeria. The report highlighted that the relatively high returns on Nigerian government securities (T-bills, bonds), which are driven by fiscal deficits and CBN Open Market Operation activities, create a strong disincentive for banks to lend to the perceived riskier private sector, especially SMEs. This is very much adduced to the fact that commercial banks generally perceive federal government backed bonds to be a less risky form of investment with a high return. This perceived risk of lending crowds out bank credit as it holds more government securities than cash thereby weakening monetary policy effectiveness such that even if the CBN cuts rates, commercial banks may still prefer risk free government securities.

The Vector Error Correction Model (VECM) applied by Iyoboyi, M., & Muftau, O. (2014), examined the impact of public debt on private investment in Nigeria. They found that government domestic debt had a significant negative impact on private sector investment. This indicates the crowding out concerns of government domestic borrowing to finance its expenditures (budget deficit). This underscores the need for policy reforms to curtail this crowding out effect so as to allow for voluminous credit net available to the private sector.

The study by Ogun & Akinlo (2014) investigated fiscal deficits and interest rates using Granger causality and Vector Error Correction Model (VECM) (1970-2011). The analysis found that there exists a simultaneous influence between fiscal deficit and interest rate suggesting that deficits increase rates by government continuous borrowing, and high rates which often is a form of monetary tightening measure can also worsen deficits through higher debt servicing costs i.e. the cost of repaying back loans. This conflict creates an adverse environment for private credit.

The Monetary Policy Committee reports of the Central Bank of Nigeria (CBN) 2023-2024, has recognized the opportunity cost between inflation control through high monetary policy rate (MPR), Credit Reserve Ratio (CRR) and the level of availability of loanable funds. It has been established that high credit reserve ratio usually above 27.5% absorbs significant liquidity from the economy constraining bank's ability to lend, even while there is evident demand for credit. The reports indicate decreasing rate in credit growth to key sectors of the economy like manufacturing and small and medium enterprises (SMEs) amidst the tightening cycle. This shows the level of influence monetary policy instruments exact on credit growth which raises concerns about potential credit contraction.

Ezekiel K. Duramany-Lakkoh in his study investigated the impact of fiscal policy on financial sector development in Sierra Leone between 1980 and 2015. It employed a quantitative approach and, in the model, financial sector development was proxied by private sector credit. In the study, the long and short-term effects of variables like GDP, money supply, interest rates, inflation, and tax revenue were analyzed through an error correction model. At first difference, all variables were found to be stationary, and a co-integration test was applied which confirmed a long-run relationship. The overall results were contradictory to existing theory. It showed that private sector credit had a positive and significant long-run relationship with money supply, real interest rates, total tax revenue, and inflation. The study revealed that businesses in Sierra Leone are willing to borrow irrespective of the level of interest rates or taxes. This is a possible reflection of a strong appetite for short to medium term capital. The study implies that this behavior may be connected to the increasing rate of nonperforming loan in the country.

Nonetheless, while empirical evidence confirms the negative impact of high monetary policy rate and fiscal deficits (via crowding-out) on Nigerian private sector credit, it also suggests that both monetary and fiscal policies has significantly shaped bank credit to private sector in Nigeria. Studies conducted over the years highlights limitations from tight policies and crowding out effects, and recent research has emphasized the role of money supply and liquidity. Recent changes in policies such as tighter or restrictive monetary policy and fiscal adjustments indicate a structural shift that could further enhance the availability of loanable funds if effectively balanced and administered. Emphasis was placed on the challenges of policy conflict (tight monetary measures plus loose fiscal measures) but it falls short of comprehensive models of how these policies interact. A clear-cut understanding of the impact of the recent intense policy mix within Nigeria's developing structural background remains a vital empirical base of analysis.

Policymakers must manage the risk of inflation and also ensure that there is availability of sufficient liquidity to support growth in the private sector and with continued research needed to monitor these dynamics.

Overall, these studies underscore the multifaceted nature of monetary policy and fiscal policy interactions in engineering credit to the private sector and economic expansion across different African economies.

2.4 Gap in Empirical Literature

Concerted efforts have been made by scholars in the field of economics and finance to explore how policies of monetary or fiscal instruments shape the reaction of commercial banks credit in the economy. Still, there exist gap in the literature as studies have at various levels focus mainly on their individual impact thereby investigating their influence in isolation without investigating how they simultaneous shape bank credit reaction in the economy (Ajayi & Oke, 2012; Olokoyo, 2011). There has not been enough empirical evidence investigating how a simultaneous change in monetary and fiscal policy instruments which can be an expansive or loose fiscal policy instrument combined with a tight or restrictive monetary policy instrument or a contractionary fiscal policy instrument with loose monetary policy instrument, engage to stir bank credit flows to the private sector in the economy most especially in current emerging markets conditions. A vast knowledge of these interactions between monetary and fiscal policies is very important for policymakers in today's economy. Knowledge of the simultaneous impact of these policies will help policy makers to understand and better adjust their policy targets to increase and sustain the availability, affordability and the volume of loanable funds to households and businesses

invariably stimulating domestic investment which enhances the strength of the economy, employment opportunities and overall economic growth and development. Having a misguided opinion about the combined effect can translate to unintended economic crisis.

Most empirical studies are often of the assumption that all banks are similar or equal. This assumption ignores the fact that different banks have different sizes, structure, risk appetite and other characteristics. This assumption of similarities or equality in banks turns blind eye to differences that could affect how banks respond to monetary or fiscal policies or economic conditions in general. Conversely, a well-coordinated policy will serve as a more effective instrument than predictions based on the study of each individual policy in isolation. Ignoring the fact that banks are heterogeneous (are made up of different characteristics and nature) raises the risks of overlooking the allocative impact on credit access for different segments of the private sector.

Essentially, there is significant gap in comprehensive analysis of the combined and potentially conflicting signals, how they shape bank credit supply to the private sector in emerging markets (EMs), and how this interaction is fundamentally shaped by the inherent heterogeneity within the banking sector itself. Filling this gap requires empirical research leveraging granular bank-level data across EMs, employing robust identification strategies, and explicitly modeling policy interactions and bank characteristics. As such, future research examining how policy instrument shape the behavior of credit to the private sector should primarily aim at creating a level field environment and addressing these gaps by employing combined multiple components and data sources which account for complex and specifically tailored to a sectorial analytical frameworks that jointly assess the effects of monetary and fiscal policies on bank credit to the private sector, especially within the context of Nigeria's evolving financial environment.

Chapter Three

Background Analysis

3.1 Introduction

A major aspect of a developing economy is rapid development of its industrial sector and development of the structural and technological composition of the economy. This development is highly characterized by private players and investors as has been widely acknowledged that private investment is the driver of economic growth and development. Credit availability and ease of access is a huge determinant to private sector performance and activity in any economy. An understanding of the dynamics and extent of influence, monetary and fiscal instruments exact on credit is therefore a sin qua non for policy makers and the government in general. This chapter provides a comprehensive background analysis on the historical context and evolution, study environment and institutional and regulatory framework and the current state of affairs that has governed monetary and fiscal policy landscape and bank credit to the private sector (BCPS) in order to present empirical trends and identify the persistent issues that characterize the Nigerian context.

3.2 Historical Context and Evolution

Historically, the steering wheel of the Nigerian economy has been on course towards balancing economic growth aspirations within a stable macroeconomic environment. Initially, the CBN, established in 1958 had been operated within the purview of a conservative objective primarily focused on price and exchange rate stability. This era span from the period of independence in 1960 through the period of mid 1980s where the monetary environment in Nigeria was highly centralized and regulated. This era was not market oriented as commercial banks had limited access to respond to market signals which also tighten financial innovation and competition in the banking sector. This however took a turn following the oil boom of the 1970s and the subsequent cycles of busts to include developmental objectives (CBN, 2008).

A critical historical shift was the IMF/World Bank Structural Adjustment Program (SAP) of 1986. This era emphasized indirect or decentralized methods to influence economic variables by adopting a market-oriented economy. It was necessitated as a result of the inefficiencies of direct control and to promote financial sector liberalization and also to align with global trends in adopting market driven economy i.e. an economy where supply and demand play vital roles in policy choices. The SAP introduced interest rate liberalization, allowing market forces to determine lending and deposit rates (CBN, 2010). This reform aimed towards deepening financial intermediation in the economy, equip banks to aid sustainable economic growth and propel the economy from recession. However, inflationary pressures and currency instability led to high nominal interest rates. From 1990-1993, lending rate followed a trend of 27.7%, 20.8%, 31.2% and 36.09% respectively, indicating an all time high in 1993 since 1981. This discourages private borrowing and undermine confidence in the banking sector.

The surge in oil revenue in the 2000s propelled higher expenditure on infrastructure, education, and health. However, expenditure growth was more than often trend following, rising in periods of booms and unstable during oil price declines (EDU expenditure, 2000-2004 in ₦'Bs; 57.96, 39.88, 80.53, 64.78, 76.50, Health Exp. In ₦'Bs; 15.22, 24.52, 40.62, 33.27, 34.20: Infrastructural ⇨road and construction expenditure in ₦'Bs; 4.99, 7.20, 7.45, 16.95, 14.90). It is based on this phenomenon that D.E. Oriakhi opined that "any time the oil market sneezes, the Nigerian economy catches pneumonia" emphasizing over dependence on oil by the Nigerian economy.

Concerted reforms have been implemented in the banking sector from the adoption of the Structural Adjustment Program (SAP) in 1986 to the reforms of 2009. The 1994 enactment of the Failed Banks (Recovery of Debts) and Financial Malpractices Act resulted in the liquidation of 30 distressed banks. Credit ceiling was imposed on interest rates and an upward review of the stipulated minimum share capital requirements for banks.

The 2004/2005 CBN comprehensive consolidation programme of the banking sector reform began as a result of the rising need to strengthen financial institutions in the country. The need for strategic reform was necessitated by high inflation and exchange rate instability in the economy. It was essentially embarked upon to improve the banks and align them with the developmental objectives of the economy. This necessitated raising banks capital based from its initial ₦2 billion to ₦25 billion as the minimum and the subsequent mergers and acquisition of banks from 89 to 25 in 2005, and later to 24 leading to the liquidation of 14 extremely distressed banks. The aim was a move towards inflation targeting aimed at maintaining stable and relatively low inflation rate in the economy. This merger and acquisition created larger, more resilient institutions with a greater capacity to lend (Soludo, 2004). This reform improved banks

capitalization and expanded the credit base, yet private sector access to finance remained limited relative to GDP.

Nigeria's experience since the global financial crisis of 2008 underscores the persistent challenge of coordinating fiscal and monetary policies. The 2008 Global Financial Crisis brought about by oil price crisis, resulted in severe depletion in the quality of banks' assets which immediately led to concerns over bank credit and liquidity. This financial crisis left the Nigerian banking sector in a severe predicament as many banks became distressed. The 2016-2020 economic crisis sponsored by the COVID-19 pandemic further tested the Fiscal-Monetary dynamics. Increasing the absorptive capacity of the economy was necessary to support households and businesses, but it coincided alongside high inflation, promoting the Central Bank of Nigeria (CBN) to increase interest rates in later years (IMF, 2024). When government expenditure is financed by domestic borrowing, the pressure frequently aligns with restrictive monetary policies aimed at controlling inflation and stabilizing the naira. These historical changes underscore the conflict between stabilization and development goals, which is integral to the Nigeria's credit dynamics.

3.3 Study environment, Institutional and Regulatory Frameworks.

The operational environment of the Nigerian financial framework through which policies of monetary and fiscal instruments engineers credit allocation is principally governed by the Apex monetary authority, Central Bank of Nigeria (CBN) who act as the central nervous system in a market economy extending credit and facilitating payment, and the federal government of Nigeria through the office of the Federal Ministry of Finance and the Debt Management Office (DMO).

In Nigeria, the Central Bank of Nigeria (CBN) which is the Apex bank is the sole monetary authority. At the heart of its mandate is the promotion of a stable monetary environment and an equitably stable price system, the establishment of a reliable and efficient financial system through sound monetary policy instruments and adequate monitoring. The Central Bank of Nigeria established by the 1958 Act and amended 2007 was given specific developmental and financial surveillance role. The roles emphasize among others the need to strategically focus on price stability and growth. In order to realize this objective, several monetary instruments, direct and indirect are deployed to influence the lending capacity of Deposit Money Banks (DMBs) in such ways as to ensure inflation optimality, growth outcomes and achieving best possible economic growth trajectory. Its principal instruments include the Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR) and Open Market Operations (OMO).

The Monetary Policy Rate (MPR) was introduced in 2006 to replace the initial Minimum Rediscount Rate (MRR). It serves as policy instrument the monetary authority use in lending to commercial banks. It is the driver for all other interest rates in the economy. The MPR has consistently followed an upward trend since 2010, from 6.25% to 11% in 2015 and a record high of 18.75% in 2023 reiterating monetary stance towards controlling money supply in the economy. A change in the MPR is an indication of the direction of the monetary authority stance. A contractionary policy to curb inflation or expansionary policy to stimulate growth which directly engineers the cost of loanable funds for both banks and the private sector (CBN, 2007).

Another policy instrument at the disposal of the Monetary authority is the Cash Reserve Ratio (CRR). This is the proportion of DMBs total deposit liability that is required to be held as reserves in cash with the CBN. The utilization of this policy instrument has witnessed moderate growth to manage systemic liquidity putting pressure on interest rate and constraining lending.

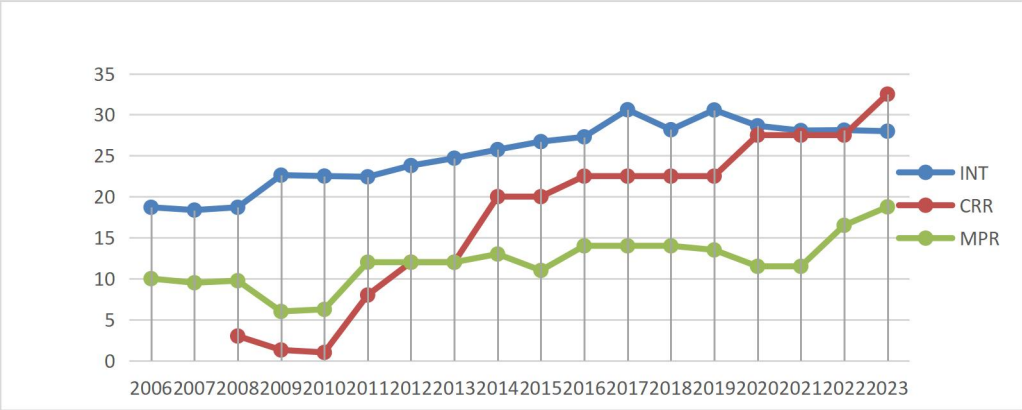
From an 8% in 2011, the CRR rose gradually to 12% in 2012 and 2013 and an increase to 20% in 2014. A high of 27.5% and 32.5% were recorded in 2022 and 2023 respectively, reflecting a stringent liquidity management approach (CBN, 2024). The Cash Reserve Ratio (CRR) is an effective policy instrument of the monetary authority for addressing excess credit in the economy by putting pressure on the deposit base available for loan creation (Okafor et al. (2021).

The Open Market Operations (OMO) is an indirect policy instrument involving the buying and selling of government securities by the Apex monetary authority in the open market to loosen or tighten the money supply. This policy in most cases constrains liquidity as banks see it as a more profitable investment than lending to households and businesses as a result of their risk appetite, thereby reducing private access to credit.

The Federal Government through the office of the Federal Ministry of Finance and Budgeting, and the Debt Management Office (DMO), is the sole authority of the instrument of fiscal policy. Through government expenditure and taxation, it influences credit availability in the economy. The federal government persistent budget deficit as a result of the differential between planned expenditure and revenue predominantly financed through domestic borrowing exact significant mounting pressure on the rate of interest in the economy invariably constraining credit volume, availability and cost in the economy. Issuing government backed instruments has been a major financing means by the DMO to fund these deficits. These instruments, highly characterized by zero risk weight and attractive yields especially in a high-interest rate environment become an appealing alternative to extending credit to households and private sector by DMBs.

3.4 Stylized Facts

A review of statistical data from the CBN financial sector and public finance Bulletin (2023) reveals the following critical trends that support our observation



The Dominance of CBN's Policy instrument

Source: Authors compilation using Excel

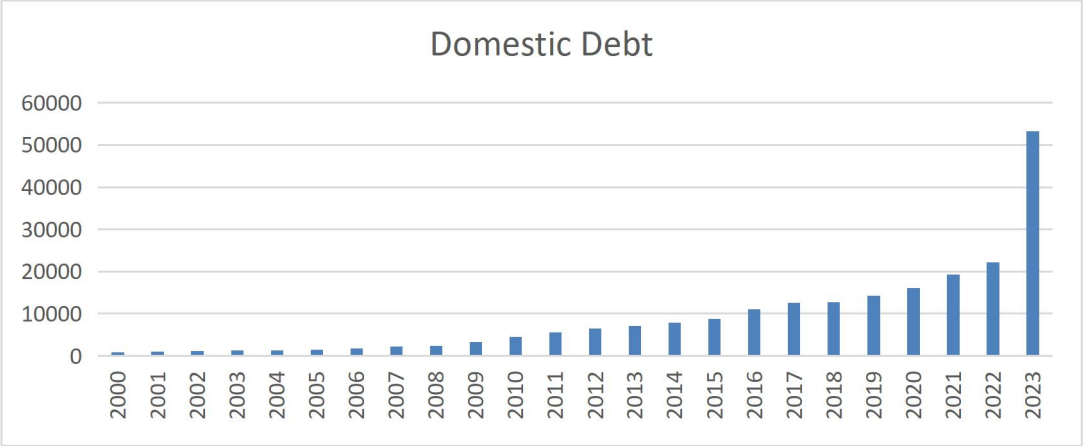
The graph above reveals statistical evidence over the past decade of the clear and concerning trends that form the stylized facts of this study.

As depicted in the diagram above, The CBN has maintained a consistently hawkish monetary stance. Since its adoption in 2006, the Monetary Policy Rate (MPR) has risen dramatically from 12% in early 2012 to 32.5% in 2023 (CBN, 2024), reflecting a relentless effort to curb inflation. Banks' lending Interest rate also followed a hawkish trend going as high as 30.6% in 2017, with a slight adjustment to 28.16% in 2018 and an upward adjustment to 30.57% in 2019 maintaining a 27.98% in 2023. This growing rate of interest imposes significant influence on credit demand by the private sector.

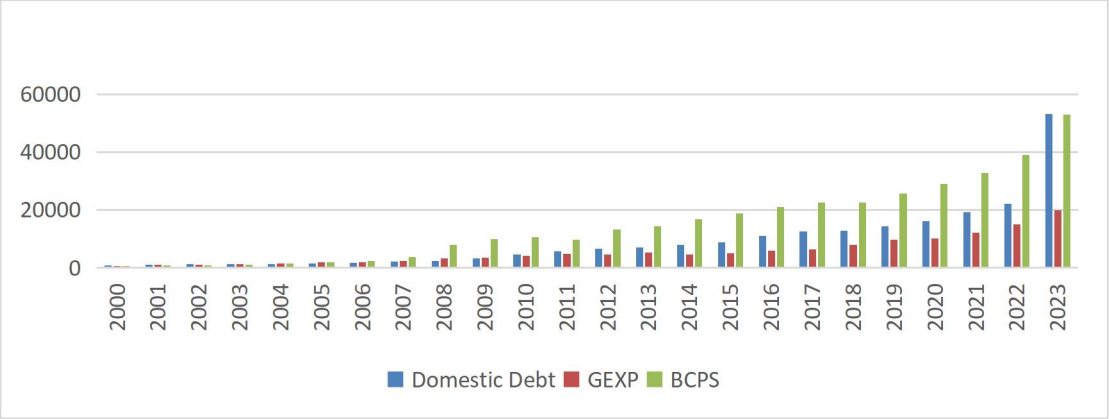
The Cash Reserve Requirement has been maintained at historically high levels from a low of 1% in 2010 to a record high of 20% in 2014 and 27.5% in 2020. This increase coincides with the

expansionary measures of the government during the economic recession brought about by the COVID-19 pandemic. The CRR is currently pegged at 32.5% as of 2023. The persistent increase requires the DMBs to hold a substantial amount of its deposit liability as reserve with the central bank invariably constraining credit volume and availability to households and businesses.

Rapid Growth in Government Domestic Debt



The figure above depicts Nigeria's domestic debt stock which has trailed on an upward trajectory witnessing exponential growth. Government Domestic debt stock has risen in ₦'Billions from 898.25, 1,525.9, 4,551.82, 8,837.00, 16,023.89, 53,258.01 in 2000, 2005, 2010, 2015, 2020 and 2023 respectively (CBN, 2023). This massive supply of government securities serves as viable alternative investment options for banks than extending credit.



Private Sector Credit, Domestic Debt and Government Expenditure

The figure above depicts the trend of bank credit to private sector, governments domestic debt and Expenditure. Notably, the figure reveals that although domestic debt trend has been on the rise, credit to private sector surged past domestic debt and government expenditure although behind, still showed an upward momentum. This can be a clear indication that, extending credit was a more viable option to purchasing government securities and Bonds most likely as a result of the hawkish stance of interest rate. CBN statistical bulletin (2023) put Credit to Private sector at 10,518.17, 18,688.42, 29,030.01, 52,884.78 all in trillions in 2010, 2015, 2020 and 2023 respectively. Although there has been increasing loanable funds to the private sector, there exist some form of crowding out. The domestic debt in tune of ₦53,258.01 trillion in 2023 could have been allocated as credit to private sector to increase domestic investment and economic activities.

These policy instruments are vital to the operationalization of the objectives of the economy. However, the environment is also characterized by other critical factors that exact influence on the macro economy

CBN's Developmental Role

The CBN has over the years taken on its developmental objective by adopting a quasi-fiscal role and creating various vital economic intervention funds like the Anchor Borrowers' Programme, Commercial Agriculture Credit Scheme, the #200B refinancing and restructuring of banks loans to the manufacturing sector. These schemes provide targeted, low-interest credit to select private sectors. The anchor borrowers programme by the CBN had an rate capped at 9% per annum outside the conventional fluctuating interest rate of DMBs, the manufacturing refinancing was pegged at 7% per annum thereby making Agricultural and manufacturing credit attractive to businesses (CBN, 2014, 2016). Manufacturing sector recorded a credit spree from 3,191.37 trillion in 2020 to 7732.46 trillion in 2023 recording a significant expansion in credit with a short period of time. The agricultural sector also witnessed a growth from 1049.68 trillion in 2020 to 2255.36 trillion in 2023.

It is therefore visibly obvious that a clear direct correlation exists between domestic debt and credit extension to private sector. Periods of rapid growth in domestic debt coincides with relative increase in the growth rate of bank credit to the private sector.

3.5 Appraisal of the subject matter providing statistical claims

The Role of Financial Deepening

The total deposit liabilities and assets of the banking sector has increased over time and as a result, more credit is allocated to acquiring government securities and not necessarily reducing private sector credit. However, credit to private sector could have grown higher without government borrowing.

Crowding-Out

The monetary value of banks holdings of government securities could have been channeled to private sector projects with potentially higher social and economic returns (e.g., manufacturing, agriculture). The data from CBN statistical bulletin (2023) shows that, banks consistently hold a substantial portion of their total credit portfolio in government securities, representing a massive diversion of potential productive credit. Bank holdings of government securities relative to total credit portfolio 2020-2023 stood at 38.44%, 43.8%, 44.2% and 42.04% respectively and averaging 42.12% in the period.

Interest Rate effect

Increased domestic borrowing often coincide with tight monetary policy to arrest the economic problem of inflation. Therefore, while credit may be readily available, the cost of obtaining it is often exorbitant which constrains investment and economic growth. The crowding-out therefore is evident in the high cost of obtaining loanable funds and not just in its availability.

CBN Interventions Mask the Effect

Analysis of the sectorial distribution of bank credit revealed that the manufacturing and Agricultural sector had the lion share of total credit allocation. This is due to the CBNs developmental objectives on the manufacturing and Agricultural sector among others. Its policies like the Anchor borrowers' program and the #200 billion refinancing of credit to the manufacturing sector among others which extend credit at a reduced interest of 7% for the manufacturing sector and 9% for the agricultural sector compared to the high interest offered by banks to the private sector. If these directed credits were stripped out, the underlying, organic growth of bank credit to the private sector based on commercial decisions might follow a different momentum.

The observation that government domestic debt, it's expenditure and bank credit to the private sector has grown concurrently establishes the limitations of simplistic economic models. The available data reveals that crowding-out effect occur primarily through the interest rate channel by increasing cost of obtaining loanable funds than affecting its quantity. Growth in government domestic debt exacerbate interest rate hike that constrains productive private investment but offering banks alterations to extending credit.

CHAPTER FOUR

METHODOLOGY OF STUDY

4.1. Introduction

To effectively ascertain the effect of monetary and fiscal policies on bank credit to the private sector in Nigeria, this chapter outline the methods adopted to achieve this aim. The chapter therefore focuses on the theoretical framework guiding the research, model specification to aid analysis and determine the impact of the variable, data sources and analytical methods adopted.

4.2. Theoretical framework

The theoretical framework is grounded on the IS-LM macroeconomic theory of Keynes (Keynesian theory) and the Financial Accelerator Theory. These theories offer logical and structural insights into how monetary and fiscal policy instruments shape private sector credit allocation.

Keynes in 1936, developed a fundamental theoretical framework for investigating fiscal and monetary policy effects on the economy. In the context of the aggregate economy, policies of fiscal and monetary instruments are vital tools for stabilizing aggregate demand and accelerating the level of investment in the economy through interest rates adjustments, government expenditure, and availability of loanable funds which serves as credit to the private sector (a driver of investment). This model (IS-LM), shows how policy instrument like fiscal policy through government spending and taxation causes movement on the IS curve showing equilibrium point in the product market to influence rate of interest and income, and also, how monetary policy through changes in money supply by either raising Cash Reserve Ratio (CRR) or cutting Monetary Policy Rate (MPR) exerts influence on the LM curve showing the locus of equilibrium point in the money market, thereby affecting liquidity volume, interest rates in the economy and also, private investment (Blanchard & Johnson, 2013).

Bernanke, Gertler, and Gilchrist in 1999 developed the Financial Accelerator Theory. This theory asserts that macroeconomic distortions are heightened by the financial condition of the borrower and his business worth. According to this theory, a restrictive policy instrument (monetary policy i.e. raising the monetary policy rate) creates more information gap between lenders (financial institutions) and borrowers (households and businesses). This gap is that the financial institutions will have less information about the creditworthiness of firms which will lead to credit rationing, especially for firms with weak collateral positions. This means that weaker firms and consumers are abandoned and credit is offered only to stronger firms. However, as a result of these distortions, consumption will reduce leading to low patronage and therefore, low productivity. This low consumer driven buying will affect the creditworthiness of the firms which makes them fall out of favor with the financial institutions. Similarly, a contractionary fiscal measure can cause a reduction in aggregate demand. This fall in demand worsens firm revenue, reducing productivity, indirectly affecting their creditworthiness. Nigeria, an inflation driven economy particularly imported inflation has had severally to take on a restrictive monetary policy. This causes a reduction in the volume of credit available and increases the borrowing costs. This increase in cost of borrowing sidelines small businesses and firms with limited collateral due to amplified asymmetric information. The theory explains why such policies may lead to severe credit rationing by financial institutions thereby causing a distortion in the developmental part of an economy highly dependent on credit.

4.3 Model specification

The research adopted the econometric model by Ademokoya, Sanni, Oke and Abogun (2020) in

their study to examine the Impact of Monetary Policy on Bank Credit in Nigeria. The model adopted in their study is as stated below:

$$logCredit = \beta_0 + \beta_1 MPR + \beta_2 LIQR + \beta_3 logM2 + \beta_4 DMLR + \varepsilon \quad (1)$$

Where:

logCredit is the natural logarithm of bank credit, MPR is monetary policy rate, LIQR is liquidity ratio, logM2 is logarithm of broad money supply, and DMLR is change in maximum lending rate

= intercept, $\beta_1 - \beta_4$ = parameter estimates, ε =error term.

To capture the variables essential in this study, Ademokoya et al., (2020) was modified and the model for this study in its log-log transformed form is stated as follows;

$$\mathbf{LnBCPS = \beta_0 + \beta_1 INT + \beta_2 LnGEX + \beta_3 LnIG + \beta_4 LnBKR + \varepsilon} \quad (2)$$

Transforming into an econometric model suitable for ARDL estimation, the general form becomes;

$$\Delta \mathbf{lnBCPS}_t = \gamma_o + \sum_{i=1}^{P} \gamma_1 \Delta \mathbf{lnBCPS}_{t-i} + \sum_{i=0}^{p} \gamma_2 \Delta \mathbf{INT}_{t-i} + \sum_{i=0}^{p} \gamma_3 \Delta \mathbf{lnGEX}_{t-i} + \sum_{i=0}^{p} \gamma_4 \Delta \mathbf{lnIG}_{t-i} + \sum_{i=0}^{p} \gamma_5 \Delta \mathbf{lnBKR}_{t-i} + \delta_1 \mathbf{lnBCPS}_{t-1} + \delta_2 \mathbf{INT}_{t-1} + \delta_3 \mathbf{lnGEX}_{t-1} + \delta_4 \mathbf{lnIG}_{t-1} + \delta_5 \mathbf{lnBKR}_{t-1} + \varphi \mathbf{ECT}_{t-1} + \varepsilon_t \quad (3)$$

Equation (2) above captures the variations in Bank Credit to the Private Sector attributable to Interest rate, Government Expenditure and Bank Reserve as variables. It states that Bank credit to Private sector is a function of Interest Rate (INT), Government Expenditure (GEX), the interaction between GEX and INT, and Bank Reserve (BKR) proxied by liquidity ratio.

Where;

β_0 ⇨ The intercept of the model showing the value of the dependent variable when all independent variables assume zero. **β_1, β_2, β_4** ⇨ Estimation coefficient of the individual parameters. Showing change in the dependent variable as a result of a change in the independent variables. **B_3** ⇨ Coefficient of the interactive term between GEXP and INT. This is the product of interest rate and government expenditure. It captures the joint effectiveness of monetary and fiscal policies, how one policy depends on the other. If $\beta_3 > 0$ and significant, then higher government expenditure reduces the negative effect of interest rates. If **β_3** < 0 and significant, the implication is that, higher government expenditure worsens the contractionary effect of interest rates indicating the crowding out effect. If the coefficient is either negative or positive but not significant, then the influence of government expenditure on bank credit does not significantly change across different levels of interest rate. **ε** ⇨ Stochastic error term capturing all other unobserved factors influencing Bank Credit.

Equation (3) above represents the ARDL model to be estimated for this analysis. It captures simultaneously the short run and long run components. Specifically, the first part of the model on the right-hand side with the summation sign represents the short run model while the non-summation sign part indicates the long run model. Δ indicates the differenced operator. It represents changes in the individual variables γ_i defines the short run parameters of the model. δ_i captures the long run estimates of the model. Φ denotes the coefficient of the error correction term indicating the speed of adjustment of short run disequilibrium to long run equilibrium.

Economic Criteria (Apriori Expectations)

To arrive at a significant result from our analysis, the result of the model shall be subjected to

evaluation on the basis of Econometric Apriori Expectations, test of significance and Econometric test.

Apriori Expectations

$B_1 < 0$; $B_2 > 0$; $B_3 > < 0$; $B_4 < 0$

B_1 < 0; Being the coefficient of Interest Rate (INT). By theory, it is expected that higher INT. i.e. rising interest rate will naturally raise cost of credit which discourages borrowing by the private sector.

B_2 > 0; The coefficient for government expenditure. When government spend more in the economy especially on infrastructural development, this spending can crowd-in private sector investment and increase the absorptive power of the economy thereby improving credit demand and supply.

B_3 > < 0; This captures how fiscal stance modifies the INT effect and vice versa. If positive, it indicates that high government expenditure weakens the negative effects of tight monetary policy rate. If negative, it amplifies the negative effects of INT.

B_4 < 0; Coefficient of Bank Reserve (proxied by liquidity ratio). Higher reserve requirement constrains credit availability which crunches loanable funds.

4.4 Estimation Techniques

Quantitative analytical econometric approach is utilized in this study to assess the effect of monetary and fiscal policies on bank credit to the private sector. Time series data is employed which covers the period from 1990 through to 2023. Descriptive statistics is also employed in the study to summarize and describe the data in a clear and concise way, to highlight patterns, and

provide insights. The Augmented Dickey-Fuller (ADF) test will be utilized to test for the presence of unit root in the data and to examine whether the data is stationary or not stationary and to determine their integration order.

To determine the optimal lag length suited for the model, the AIC and SIC will be utilized to select the optimal lag structure (Ozciceks and McMillin, 1999). Given that chances for having mixed integration (I(0) and I(1)) variables exist, and the need to determine not only the short run dynamics of the impact but also, it's long run relationship, the Autoregressive Distributed Lag (ARDL) Bounds Testing Approach will be utilized in the analysis of the study together with the Error Correction Model (ECM) to evaluate the effect of monetary and fiscal policies on bank credit to the private sector in Nigeria capturing its short and long run dynamics.

The ARDL bounds test technique has been widely regarded as a more superior and improved alternative to the conventional Engle-Granger and Johansen co-integration techniques because of its robust range of advantages which has made it extensively utilized in empirical studies (Pesaran et al., 2001). This method accommodates small sample properties of models adopting the time series data. The ARDL is conveniently applied to series that are Integrated of the order of I(0) and I(1) because it exhibits no restrictions on the order of integration as long as none of the series has higher integration level of I(2). The technique also assists in the resolution of the problem of endogeneity by including the lagged form of the dependent variable (Autoregressive) as explanation or independent variable (Distributed Lag) which can reduce reverse causality by capturing delayed effects. The Autoregressive Distributed Lag (ARDL) model was employed as the main estimation technique in this analysis because it allows for the analysis of both short-run and long-run relationships among variables of interest in the model, even when the regressors are of mixed integration orders.

4.5 Data Collection and measurement of variable

This analysis employs secondary data to investigate the impact of monetary and fiscal policies on bank credit to the private sector.

Annual data for the variables were obtained from the Central Bank of Nigeria's Statistical Database on Bank Credit to Private sector, Lending rate of DMB's (INT), Total Government Expenditure and Bank Reserve over the period 1990 – 2023 for the Nigerian economy. This source provides information on monetary and fiscal policies and bank credit to the private sector.

The table below presents the description and measurement of variables used in this study.

S/N	Variable	Symbol	Measurement
1	Bank Credit to Private Sector	LnBCPS	Natural log of bank credit to the private sector.
2	Interest Rate	INT	Lending rate of DMB's.
3	Government Expenditure	LnGEX	Natural log of Government Expenditure.
4	IG	LnIG	Natural log of the interactive term between Interest Rate and Government Expenditure.
5	Bank Reserve	LnBKR	Natural log of Bank Reserve (Proxied by Liquidity Ratio)

Source: Authors compilation.

CHAPTER FIVE

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

5.0 Introduction

To empirically examine the effect of monetary and fiscal policies on bank credit to private sector in Nigeria, this section presents detailed analysis of variables adopted in the study to empirically analyze how these macroeconomic variables affect credit availability and affordability in the Nigeria economy.

5.1 Descriptive Statistics

The descriptive analysis of the dataset provides invaluable information on the variations of essential macroeconomic policy instrument related to Bank credit to the private sector in Nigeria. These variables exhibit distinctive characteristics that are vital for grasping the overall effect of monetary and fiscal policies.

Table 5.1 Descriptive statistics

	BCPS	INT	GEX	BKR
Mean	10621.92	24.70029	4025.191	49.61029
Median	2979.640	23.55500	2244.450	47.65000
Maximum	52884.74	36.09000	19808.40	104.2000
Minimum	33.55000	18.36000	60.30000	26.39000
Std. Dev.	13404.24	4.363991	4693.482	15.22638
Skewness	1.364596	0.494056	1.666139	1.451541
Kurtosis	4.336488	2.531244	5.523884	6.393818
Jarque-Bera	13.08247	1.694470	24.75494	28.25666
Probability	0.001443	0.428598	0.000004	0.000001
Sum	361147.0	839.8100	136856.5	1686.750
Sum Sq. Dev.	5.93E+09	628.4657	7.27E+08	7650.810
Observation	34	34	34	34

Source: Computation using EViews 12

In the table above, descriptive statistics on the main variables adopted in the model are presented.

Based on the data utilized in this study, Bank Credit to Private Sector (BCPS) had a mean value of ₦10,621.92 billion indicating the average credit extended to the private sector within the study period. The wide difference between the median of ₦2,979.640 billion and the mean suggest that the data is positively skewed indicating that the tail of the distribution stretches towards the values on the right. This is rightly confirmed by the skewness value of 1.36 signifying that few relatively higher values are pulling the mean upward. The standard deviation of ₦13,404.24 billion indicates a wide variability in BCPS among the observations. The Kurtosis value of ≃ 4.34 confirming the dataset (BCPS) has more extreme values meaning that these values occur more often than expected. The Jarque-Bera test probability of 0.0014 which is lesser than the 0.05 level of significance further indicates that the variable does not follow a normal distribution.

Interest Rate (INT) over the period of observation had a mean of 24.7% indicating that, within the scope of this analysis, interest rate was averaged at 24.7%. The standard deviation of ≃ 4.36% indicates that interest rate within the period fluctuated between 24.7% ± 4.36% i.e. roughly between 20.34% and 29.6%. The positive Skewness of 0.49% indicates that the interest rate data is slightly rightly skewed i.e. most of the data converge slightly below the mean. The Kurtosis of 2.53% implies that the distribution follows a flatter part with light tails and fewer extreme values Jarque-Bera probability of 0.4286 indicates that the interest rate data over the study period is approximately normally distributed.

In the case of Government Expenditure (GEX), the data exhibited a mean value of ₦4,025.191 billion and a median value of ₦2,244.45 billion. The implication is that, over the study period, government expenditure averaged a total of ₦4,025.191 billion. The wide gap between the mean

and median suggest positive Skewness in the data such that some large expenditure data are pulling the mean upward. The standard deviation of ₦4,693.46 billion which is greater than the mean suggests that expenditure values have fluctuated greatly within the study period. The positive skewness of 1.666 suggest that expenditure data over the study period is rightly skewed with most values concentrated at lower expenditure levels with few years of exceptionally high spending. The kurtosis of 5.5239 indicates sharper peak and heavy tails suggesting that extreme values occur more frequently. The Jarque-Bera probability of 0.000004 which is lesser than the 5% level of significance suggest that government expenditure data within the study period is not normally distributed likely due to extreme spending in some periods.

On the other hand, Bank Reserve (BKR) series over the study scope averaged 49.61 with median of 47.65 suggesting a right skewed distribution. The standard deviation of 15.226 suggest relatively high variation in the series. The skewness (1.452) further confirms that the data is skewed to the right. The kurtosis (6.394) indicates that the distribution is highly peaked with heavy tails indicating that extreme values occur more frequently than expected. This occurrence is further confirmed by the Jarque-Bera probability (0.000001) suggests that bank reserve date (proxied by liquidity ratio) does not follow a normal distribution.

5.2 Correlation Analysis

Table 5.2 Correlation Matrix

	LnBCPS	INT	LnGEX	LnBKR
LnBCPS	1			
INT	0.164228	1		
LnGEX	0.987950	0.143703	1	
LnBKR	0.275055	0.190528	0.348598	1

Source: Author computation using EViews 12

The table above presents the degree of correlation between the variables of study. It shows the strength of association and direction of the relationship between the macroeconomic variables adopted in this study. The resulting analysis depicts that all variables are positively related indicating that all variables in the study follows same direction with differing linear strength of association among the pairs. The correlation matrix reveals that Bank credit to the private sector (LnBCPS) has a positive relationship with all variables of interest (INT, LnGEX, LnBKR). It reveals that LNBCPS is positively correlated with Interest rate (INT) with a coefficient of 0.164. The implication is that higher interest rate although not necessarily significant, positively and weakly influences credit to private sector which could be counterintuitive. This might be due to underlying credit determinants in the economy and various intervention programs by monetary and fiscal authorities which in most cases are outside the scope of the conventional DMBs lending rate (INT). On the other hand, LnBCPS also exhibit very strong correlation with LnGEX with a coefficient of 0.988 indicating that higher government expenditure is positively related to higher credit availability by banks. LnBKR is also positively correlated with LnBCPS with a coefficient of 0.275. The coefficient suggests a weak relationship between the two variables and its effect is not necessarily significant. Interest rate (INT) also exhibited positive relationship with LnGEX and LnBKR with coefficient of 0.1437 and 0.1905 respectively. Although positive, these relationships are not necessarily significant as the effect is only minor and doesn't exhibit wide changes within the variables suggesting that based on the available data, interest rate exerts less immediate influence on Government Expenditure and Bank Reserve. LnGEX also has a positive correlation with LnBKR with coefficient of 0.3486. Although this relationship exhibits no high correlation, but it's effect can be considered moderate.

5.3 Preliminary Test

5.3.1 Unit Root Test

The reliability of an econometric analysis lies in the stationarity of the variables in the study implying the variables has no unit root problem thereby making the result admissible and not spurious. To ascertain the level of stationarity of the different variables in this study, the Augmented Dickey-Fuller (ADF) unit root test was conducted to determine the level of integration of the variables suitable for the model of choice of study (ARDL).

Table 5.3.1 Augmented Dickey-Fuller Unit Root Test

Variables	ADF Test Statistics	ADF Critical Values			Order of integration	P-Value	Remark
		1%	5%	10%			
LnBCPS	-4.207123	-3.653730	-2.957110	-2.617434	I(1)	0.0025	Stationary at First Difference
INT	-3.398758	-3.646342	-2.954021	-2.615817	I(0)	0.0182	Stationary at Level
LnGEX	-3.123741	-3.653730	-2.957110	-2.617434	I(0)	0.0347	Stationary at Level
LnIG	-6.780651	-3.661661	-2.960411	-2.619160	I(1)	0.0000	Stationary at First Difference
LnBKR	-6.414987	-3.653730	-2.957110	-2.617434	I(1)	0.0000	Stationary at First Difference

Source: Authors compilation using Excel.

Table 5.3 above presents the ADF unit root test. The results indicate a mixed order of integration among the variables of interest which clearly aligns with the criteria of the ARDL model allowing for the estimation of mixed order of integration of variables integrated in the order I(0)

and I(1). The ADF test results shows that INT and LnGEX are integrated of order I(0) i.e. they are stationary at their levels while other variables such as LnBCPS, LnBKR and the interactive term LnIG at their levels exhibited a unit root problem but after first differencing, the variables became stationary i.e. Integrated of order I(1). The presence of both order of integration, I(0) and I(1) satisfy the necessary condition for using the Autoregressive Distributed Lag (ARDL) model as it accommodates estimating variables with mix order of integration provided none is of second differencing I(2).

5.3.2 Co-integration Test

It is invaluable to examine the possibility of having cointegration in the regression result. The ARDL Bounds test is suitable for estimating cointegration as the variables are of mixed order of integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	7.962210	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Table 5.3.2: Bounds Test for cointegration

Source: Authors computation using EViews 12

From the analysis above, the F-statistic of 7.962210 clearly exceeds the upper bound of all significant levels at 10%, 5% and 1% with upper bound I(1) values at 3.09, 3.49, and 4.37 which evidently suggests that cointegration exist among the variables. We can therefore reject the null

hypothesis of No levels relationship and conclude that levels relationship exists among the variables. Having established cointegration, it is therefore necessary to estimate the short run and error correction model.

5.4 Estimation

5.4.1 ARDL Short-run analysis and cointegration

Dependent Variable: D(LNBCPS)
Method: ARDL
Date: 10/30/25 Time: 15:51
Sample: 5 34
Included observations: 30
Dependent lags: 4 (Automatic)
Automatic-lag linear regressors (2 max. lags): INT LNGEX LNIG LNBKR
Deterministics: Restricted constant and no trend (Case 2)
Model selection method: Akaike info criterion (AIC)
Number of models evaluated: 324
Selected model: ARDL(4,2,2,2,2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.320084	0.039356	-8.133117	0.0000
D(LNBCPS(-1))	-0.572477	0.156264	-3.663527	0.0018
D(LNBCPS(-2))	-0.699507	0.142655	-4.903487	0.0001
D(LNBCPS(-3))	-0.411373	0.102193	-4.025441	0.0008
D(INT)	0.141272	0.052744	2.678427	0.0153
D(INT(-1))	-0.202473	0.067256	-3.010474	0.0075
D(LNGEX)	3.587592	1.350584	2.656327	0.0161
D(LNGEX(-1))	-5.202385	1.756971	-2.960997	0.0084
D(LNIG)	-3.409820	1.348711	-2.528207	0.0210
D(LNIG(-1))	5.108342	1.725552	2.960410	0.0084
D(LNBKR)	-0.431476	0.067515	-6.390767	0.0000
D(LNBKR(-1))	-0.112113	0.059461	-1.885482	0.0756

R-squared	0.863124	Mean dependent var	0.201025
Adjusted R-squared	0.779478	S.D. dependent var	0.154846
S.E. of regression	0.072716	Akaike info criterion	-2.115347
Sum squared resid	0.095176	Schwarz criterion	-1.554868
Log likelihood	43.73020	Hannan-Quinn criter.	-1.936045
F-statistic	10.31872	Durbin-Watson stat	2.203497
Prob(F-statistic)	0.000011		

* p-values are incompatible with t-Bounds distribution.

Source: Authors computation using EViews 12

The ARDL regression analysis above represents the Short-run analysis and error correction estimate.

The cointeq* term with coefficient -0.320084, statistically significant at the 5% level of significance with p-value of 0.0000 represents the speed of adjustment of short-run distortions to

long run equilibrium. It implies that distortion in the short-run is corrected for at a speed of 32.01% each period indicating a fairly quick response rate.

D(LNBCPS) in the first, second and third lagged period with coefficient -0.573, -0.6995, and -0.411 respectively and with p-value all < 5% level of significance in the short run exhibited negative significant effect on current changes in bank credit to private sector i.e. past changes in bank credit significantly reduces current changes. This variation might be due to corrective market adjustment such that periods of high increase in credit are followed by period of low increase in credit which can be due to meeting reserve requirements by the CBN or liquidity tightening through higher interest rates to control inflation.

Interest rate exhibited a mixed effect in the short run. In the immediate period, D(INT) exerted a positive effect of about 0.141 (p-value 0.015) on bank credit to private sector implying that an increase in interest rate positively and significantly affect credit growth. This might possibly be due to deposit mobilization of higher interest rate or possibly banks expanding loanable funds. However, D(INT (-1)) which represents the immediate past period in the short run has negative effects on bank credit with coefficient of -0.203 with p-value 0.0075. The implication is that over time, variations in Interest rate significantly crunches bank credit due to fall in demand resulting from higher interest rate.

Government expenditure also exhibited mixed effect in the short run. D(LNGEX) positively and significantly (3.588, p-value 0.016) affect bank credit. This implies that government expenditure increases credit to private sector in the short run. This positive effect can possibly be due to liquidity injection into the economy and improved business environment (facilities). However, D(LNGEX(-1)) representing the immediate past period in the short run crowds out credit with

coefficient of -5.202 and p-value of 0.0084 suggesting that after the initial stimulus, crowding-out sets in.

The interaction between interest rate and government expenditure D(LNIG) in the short run negatively (-3.4098) and significantly ($p < 0.05$) affect bank credit to private sector. The simultaneous increase in INT and GEX declines credit availability. The implication is that, higher government spending financed from borrowing worsens the negative impact of higher interest rate in the current period. However, in the immediate past period D(LNIG(-1)) positively (5.109) and significantly (0.008) affect credit suggesting a delayed crowd-in effect implying that interest rate pressure eases overtime and government spending filter into the economy.

Bank reserve D(LNBKR) in the immediate and one period past in the short run with coefficient – 0.432 ($p < 0.05$) and -0.112 ($p> 0.05$) respectively constrains bank credit implying that higher reserves Though this effect is only statistically non zero in the immediate period indicating that higher reserves with the monetary authority reduces credit availability which serves as a typical tightening effect.

The R-Squared statistics of 0.863124 implies that 86.31% variations in ΔLnBCPS in the short run are accounted for by variations in the independent variables adopted in the model. The adjusted R-Squared statistics given as 0.779478 also implies that 77.95% of short-run variations in ΔLnBCPS are explained by the included variables after adjusting for degree of freedom. Overall, the model is statistically significant with a prob (F-statistic) of 0.000011 indicating that the explanatory variables are jointly significant in explaining the short-run variation in LnBCPS at the 1% level of significance.

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
INT	1.889050	0.524399	3.602315	0.0032
LNGEX	48.46123	13.38760	3.619860	0.0031
LNIG	-47.13272	13.42034	-3.512036	0.0038
LNBKR	-1.981463	0.458636	-4.320340	0.0008
C	111.1924	31.69081	3.508665	0.0038

EC = LNBCPS - (1.8890*INT + 48.4612*LNGEX -47.1327*LNIG -1.9815 *LNBKR + 111.1924)

5.4.2 ARDL Long-run Estimate

Source: Authors computation using EViews 12

The table above presents the long run analysis of the effect of monetary and fiscal policies on bank credit to private sector.

INT rate in the long-run exhibits a positive and significant effect on LNBCPS suggesting that in the long run, INT exerts a positive coefficient in LNBCPS, although this effect is weak, statistically it is significant. The coefficient of 1.889050 ($p < 0.05$) suggest that a 1% change in interest rate would lead to a 1.89% change (increase) in LNBCPS. This effect as highlighted in the short run might be due to credit expansion by DMBs as a result of high interest or deposit mobilization.

Government expenditure (LNGEX) in the long run exhibit strong statistically significant positive impact on bank credit to private sector (LNBCPS). The coefficient of 48.46123 ($p < 0.05$) implies that a 1% change in government expenditure will lead to a 48.45% change in LNBCPS. The implication is that government spending accelerates credit growth through liquidity injection. This effect as reveal by the interaction term LNIG is dependent on the prevailing level of interest rate at the time.

The interactive term which represents the multiplication of INT and GEX (LNIG) with a coefficient of -47.13272 (p-value 0.0038) indicates that these policy instruments rely on each other. In implies that although government expenditure exerts positive significant effect on bank credit as a standalone, the prevailing level of interest rate in the economy negates this effect. The coefficient of -47.13% indicates that a percentage increase in government expenditure worsens the negative effect of interest rate on bank credit to private sector by about 47.13%. This reveals high dependence and policy interaction between interest rate and government expenditure further revealing the crowding-out effect of government expenditure on bank credit.

Bank Reserve (LNBKR) (1.981463, p-value 0.0008) also exhibited significant negative impact on bank credit indicating that a percentage increase in reserve requirements crunches credit volume and availability by about -1.98% and this effect is statistically different from zero.

The coefficient of the constant term (111.1924, p-value 0.0038) implies that although things being equal, is the variations in LnBCPS when all other variables in the model are zero

This analysis has been able to establish that, although policy instrument of monetary and fiscal policies has distinct impact of the volume and availability of credit in the economy it has also been able to reveal that these policy instruments have a dependent nature as the effect of one is dependent on the prevailing level of the other. This clearly justify the need for policy harmonization within the context of the Nigerian economy.

5.5 Diagnostic Testing

5.5.1 Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.982069	Prob. F(2,11)	0.1840
Obs*R-squared	7.947275	Prob. Chi-Square(2)	0.0188

Source: Authors computation using EViews 12

The Breusch-Goffrey serial correlation LM Test above was conducted as a diagnostic measure for serial correlation in the model.

Null hypothesis: No serial correlation. Prob(F-statistic) 0.1840

Decision; Since the probability of the F-statistic is greater than the 5% level of significance, we fail to reject the null hypothesis and conclude that there is no serial correlation in the model.

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.544013	Prob. F(16,13)	0.8759
Obs*R-squared	12.03114	Prob. Chi-Square(16)	0.7418
Scaled explained SS	1.696651	Prob. Chi-Square(16)	1.0000

5.5.2 Heteroskedasticity Test

Source: Authors computation using EViews 12

The heteroskedasticity test was also performed to ascertain if the residual follows the assumption of the OLS of constant variance and zero mean. The Breusch-Pagan-Goffrey test was utilized for this.

Null hypothesis: Homoskedasticity (absence of heteroskedasticity) i.e. the variance is constant

Prob (F-statistic): 0.8759

Decision: Since the p-value > 5% level of significance, we fail to reject the null hypothesis and conclude that the model is Homoskedastic i.e. has constant variance and thus fulfils the assumption of the OLS.

Ramsey RESET Test
Equation: UNTITLED
Omitted Variables: Squares of fitted values
Specification: LNBCPS LNBCPS(-1) LNBCPS(-2) LNBCPS(-3) LNBCPS(-4) INT INT(-1) INT(-2) LNGEX LNGEX(-1) LNGEX(-2) LNIG LNIG(-1) LNIG(-2) LNBKR LNBKR(-1) LNBKR(-2) C

	Value	df	Probability
t-statistic	0.027048	12	0.9789
F-statistic	0.000732	(1, 12)	0.9789
Likelihood ratio	0.001829	1	0.9659

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	5.80E-06	1	5.80E-06
Restricted SSR	0.095176	13	0.007321
Unrestricted SSR	0.095170	12	0.007931

LR test summary:

	Value
Restricted LogL	43.73020
Unrestricted LogL	43.73112

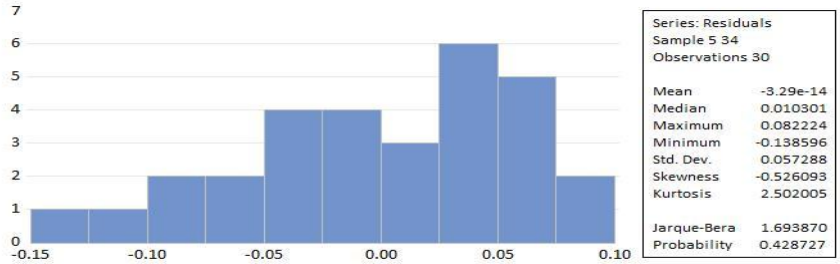
5.5.3 Ramsey Reset Test

Source: Authors computation using EViews 12

The Ramsey Reset Test was conducted to determine if the model for the analysis is correctly specified.

Null hypothesis: The model is correctly specified. Prob (F-statistic): 0=9789

Decision: The Ramset reset test statistic with p-value greater than the 5% level of significance indicate that we fail to reject the null hypothesis and conclude that the model is correctly specified and there is no evidence of model misspecification.



5.5.4 Normality Test

Source: Authors computation using EViews 12

The Histogram-Normality test was also performed to determine if the residuals are normally distributed.

Null hypothesis: The residual is normally distributed

Jarque-Bera prob: 0.4287 > 0.05

Decision: The test statistic as presented above reveals that the Jarque-Bera probability of 0.4287 is higher than the 5% level of statistical significance. We therefore fail to reject the null hypothesis that the residuals are normally distributed.

5.6 Hypothesis Testing

Hypothesis one (H_1): There is no significant relationship between monetary policy (INT) and bank credit to the private sector.

Relationship	Coefficient	P-value	Decision
Short-run	0.141272	0.0153	Reject H_0
Short-run (-1)	-0.202473	0.0075	Reject H_0

Long run	1.889050	0.0032	Reject H_0

Decision: From the ARDL long and short run estimates, the p-value of INT were all statistically significant at the 5% level of significance. Therefore, we reject the null hypothesis and conclude that there is a significant relationship between monetary policy (INT) and bank credit to private sector.

Hypothesis two(H_2): Fiscal policy has no significant impact on bank credit to private sector.

Relationship	Coefficient	P-value	Decision
Short-run	3.587592	0.0161	Reject H_0
Short-run (-1)	-5.202385	0.0084	Reject H_0
Long run	48.46123	0.0031	Reject H_0

Decision: Since all p-values < 0.05, we reject the null hypothesis and conclude that fiscal policy through government expenditure significantly impact bank credit to private sector

Hypothesis three (H_3): The effect of the interaction between monetary (INT) and fiscal (GEX) policy is not statistically different from zero.

Relationship	Coefficient	P-value	Decision
Short-run	-3.409820	0.0210	Reject H_0
Short-run (-1)	5.108342	0.0084	Reject H_0
Long run	-47.13272	0.0038	Reject H_0

Decision: Given that all p-values are < 0.05, we reject the null hypothesis and conclude that the effect of the interaction between monetary (INT) and fiscal (GEX) policies is statistically different from zero. The implication of this is that, given the more negative significant relationship, over time, increased government expenditure financed through domestic borrowing negatively and significantly crunches credit volume and availability in the economy. This suggests the need for a robust policy coordination and harmonization in the economy.

5.7 Policy implications of findings

The empirical findings of this study which analyses the effect of monetary and fiscal policies on bank credit to private sector is invaluable to the monetary and fiscal authorities, policy makers and economic agents. The results indicate that in the short run, both macroeconomic policies (interest rate and government expenditure) exhibit significant mixed reactions indicating that temporary shocks to these macroeconomic variables may produce unstable credit environment. In the long run, it was observed that these variables exhibited a positive significant relationship on bank credit to private sector indicating that over time, the unstable effects of shocks in these macroeconomic variables tend to become stable.

However, the positive significant effect of these variables is not standalone. The interaction between interest rate and government expenditure (LNIG) which captures the joint effect of these macroeconomic variables reveal that, a simultaneous increase in government expenditure and interest rate significantly crunches credit volume and availability. The implication of this result is that, while a mixed reaction exists in the short term, a simultaneous expansionary fiscal and monetary policy instrument (INT and GEX) could facilitate macroeconomic imbalance in the financial market such as inflationary pressure, distortions in the money market and possibly crowding out of private sector investment through increased government expenditure financed by domestic borrowing in the long term. This relationship underscores potential policy conflict and lack of coordination between these macroeconomic agents which translates to inefficient credit environment. (Blanchard & Leigh, 2013; Arestis & Sawyer, 2003).

This outcome therefore validates the need for coordinated macroeconomic policy environment, harmonizing policy framework by aligning policy instruments and objectives to ensure that a policy effect does not contravene the effect of another macroeconomic policy. While policy coordination is invaluable, fiscal expansion should be geared towards productivity and

productive activities while the monetary authority should focus on moderating the rate of interest in the economy. A well harmonized and coordinated policy environment fosters credit expansion invariably accelerating the rate of private investment in the economy.

It is therefore a matter of necessity to implement logically coordinated and mutual policy game or strategies for enhancing credit volume, availability and cost from financial institutions to private sectors for achieving desired economic growth and development.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Here, the study attempts to summarize key findings, concludes and proffer possible policy recommendations based on the analysis and result obtained in the proceeding chapter.

6.2 Summary of findings

This study empirically investigated the effect of monetary and fiscal policies on bank credit to private sector in Nigeria utilizing time series data on key macroeconomic variables and using the ARDL method to systematically capture both the short-run dynamics and long run estimates of the model. The dependent variable in the study was Bank credit to private sector while Interest rate and government expenditure served as key regressors in the analysis. While this analysis seeks to determine the effect of these macroeconomic policy instruments, their joint effect which is the interaction between these two variables was estimated to ascertain if both policies rely on each other.

The result revealed a mixed statistically significant influence of both policies in the short run, while in the long run, both policies exhibited statistically significant positive impact on bank credit.

While this effect as a standalone are significant in both the long and short run, their interaction revealed the need for a well-coordinated and harmonized policy environment. The analysis revealed that the positive impact of government expenditure in the economy on credit availability statistically and significantly depends on the prevailing interest rate implying that expansionary fiscal policy (GEX) coexisting with tight monetary policy (INT) distorts the credit market in the long run while when same interest rates later fall as evidence in the positive lag of LNIG in the short run, that same government spending crowds in credit, stimulating private

borrowing after a short delay. It is therefore a sine qua non to effectively and efficiently align these policies for an improved financial deepening environment.

6.3 Conclusion

The study has been able to empirically establish that the instrument of monetary and fiscal policies exerts significant effect on bank credit to the private sector. Although in the short run their effect is minimal and does not cause high variation in LNBCPS, the long run estimate of government expenditure highly and significantly affects credit volume and availability. Irrespective of this high impact, the prevailing level of interest in the economy is a key determinant of the direction of the impact as it has been established from this study that simultaneous 1% increase in both policy instruments statistically and significantly crunches bank credit by about -47.133% in the long run.

Overall, policy instruments are necessary regulatory conditions for an economy and so, their precise coordination to foster positive impact is invaluable to policy makers and governments.

6.4 Policy recommendations

Based on the relevant findings of this study, the following recommendations are made;

First, it is highly essential to operate a moderate and accommodating monetary environment by the monetary authority aimed at stabilizing DMBs lending rate and invariably containing inflationary pressure. This coordination can accelerate productive credit flow and enhance financial deepening.

The fiscal authority should prioritize productive expenditure especially in sectors like manufacturing, mining, agriculture etc. Investment in these productive sectors of the economy positively accelerate credit demand.

Third, while these policy instruments play significant role in the financial market, their synchronization is paramount for an effective financial landscape. Institutionally coordinated policy environment which brings the fiscal-monetary policy committee in harmony is essential and quite a feat.

Lastly, it is necessary to have a guaranteed liquidity in the financial market to strengthen credit environment. As such, bank reserves management should adopt a more flexible approach.

6.5 Area for further studies

While ARDL provides both long and short run estimates of the model, it assumes a linear one directional relationship. The output of the ARDL model assumes a linear relationship i.e. an increase or decrease in a variable would cause a specific change in the dependent variable. It has been established that positive and negative shock exerts different impact in the economy. Therefore, future studies could explore the effect of these macroeconomic policies employing the NARDL, which may capture different responses during expansionary and contractionary phases.

Subsequent research can also investigate and include how institutional quality such as borrowers net worth affects bank credit to private sector

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Appendix

	BCPS	INT	GEX	IG	BKR
Mean	10621.97	24.70029	4025.191	106841.5	49.61029
Median	2979.640	23.55500	2244.450	41554.56	47.65000
Maximum	52884.78	36.09000	19808.40	554239.0	104.2000
Minimum	33.55000	18.36000	60.30000	1385.280	26.39000
Std. Dev.	13404.24	4.363991	4693.482	134657.1	15.22638
Skewness	1.364596	0.494056	1.666139	1.702788	1.451541
Kurtosis	4.336488	2.531244	5.523884	5.390430	6.393818
Jarque-Bera	13.08247	1.694470	24.75494	24.52547	28.25666
Probability	0.001443	0.428598	0.000004	0.000005	0.000001
Sum	361147.0	839.8100	136856.5	3632610.	1686.750
Sum Sq. Dev.	5.93E+09	628.4657	7.27E+08	5.98E+11	7650.810
Observations	34	34	34	34	34

	LNBCPS	INT	LNGEX	LNIG	LNBKR
LNBCPS	1	0.16422815...	0.98795028...	0.98511422...	0.27505464...
INT	0.16422815...	1	0.14370306...	0.24516855...	0.19052780...
LNGEX	0.98795028...	0.14370306...	1	0.99460798...	0.34859849...
LNIG	0.98511422...	0.24516855...	0.99460798...	1	0.36036329...
LNBKR	0.27505464...	0.19052780...	0.34859849...	0.36036329...	1

Null Hypothesis: LNBCPS has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.348545	0.1636
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNBCPS) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.207123	0.0025
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: INT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.398758	0.0182
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNGEX has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.123741	0.0347
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNIG has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.227789	0.2015
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNIG) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.780651	0.0000
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNBKR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.816526	0.0668
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller test statistic		-6.414987	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Dependent Variable: D(LNBCPS)
Method: ARDL
Date: 10/30/25 Time: 15:51
Sample: 5 34
Included observations: 30
Dependent lags: 4 (Automatic)
Automatic-lag linear regressors (2 max. lags): INT LNGEX LNIG LNBKR
Deterministics: Restricted constant and no trend (Case 2)
Model selection method: Akaike info criterion (AIC)
Number of models evaluated: 324
Selected model: ARDL(4,2,2,2,2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.320084	0.039356	-8.133117	0.0000
D(LNBCPS(-1))	-0.572477	0.156264	-3.663527	0.0018
D(LNBCPS(-2))	-0.699507	0.142655	-4.903487	0.0001
D(LNBCPS(-3))	-0.411373	0.102193	-4.025441	0.0008
D(INT)	0.141272	0.052744	2.678427	0.0153
D(INT(-1))	-0.202473	0.067256	-3.010474	0.0075
D(LNGEX)	3.587592	1.350584	2.656327	0.0161
D(LNGEX(-1))	-5.202385	1.756971	-2.960997	0.0084
D(LNIG)	-3.409820	1.348711	-2.528207	0.0210
D(LNIG(-1))	5.108342	1.725552	2.960410	0.0084
D(LNBKR)	-0.431476	0.067515	-6.390767	0.0000
D(LNBKR(-1))	-0.112113	0.059461	-1.885482	0.0756

R-squared	0.863124	Mean dependent var	0.201025
Adjusted R-squared	0.779478	S.D. dependent var	0.154846
S.E. of regression	0.072716	Akaike info criterion	-2.115347
Sum squared resid	0.095176	Schwarz criterion	-1.554868
Log likelihood	43.73020	Hannan-Quinn criter.	-1.936045
F-statistic	10.31872	Durbin-Watson stat	2.203497
Prob(F-statistic)	0.000011		

* p-values are incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	7.962210	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	30	Finite Sample: n=30		
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

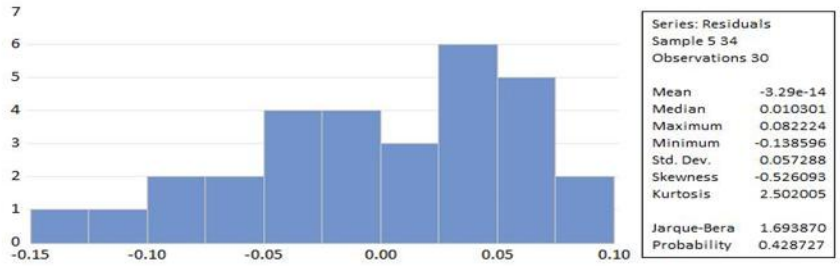
Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INT	1.889050	0.524399	3.602315	0.0032
LNGEX	48.46123	13.38760	3.619860	0.0031
LNIG	-47.13272	13.42034	-3.512036	0.0038
LNBKR	-1.981463	0.458636	-4.320340	0.0008
C	111.1924	31.69081	3.508665	0.0038

EC = LNBCPS - (1.8890*INT + 48.4612*LNGEX -47.1327*LNIG -1.9815 *LNBKR + 111.1924)

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.544013	Prob. F(16,13)	0.8759
Obs*R-squared	12.03114	Prob. Chi-Square(16)	0.7418
Scaled explained SS	1.696651	Prob. Chi-Square(16)	1.0000



Ramsey RESET Test
Equation: UNTITLED
Omitted Variables: Squares of fitted values
Specification: LNBCPS LNBCPS(-1) LNBCPS(-2) LNBCPS(-3) LNBCPS(-4) INT INT(-1) INT(-2) LNGEX LNGEX(-1) LNGEX(-2) LNIG LNIG(-1) LNIG(-2) LNBKR LNBKR(-1) LNBKR(-2) C

	Value	df	Probability
t-statistic	0.027048	12	0.9789
F-statistic	0.000732	(1, 12)	0.9789
Likelihood ratio	0.001829	1	0.9659

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	5.80E-06	1	5.80E-06
Restricted SSR	0.095176	13	0.007321
Unrestricted SSR	0.095170	12	0.007931

LR test summary:

	Value
Restricted LogL	43.73020
Unrestricted LogL	43.73112

Data on variables

Year	BCPS	INT	GEX	IG	BKR
1990	33.55	27.7	60.3	1670.31	44.3
1991	41.35	20.8	66.6	1385.28	38.6
1992	58.12	31.2	92.8	2895.36	29.1
1993	127.12	36.09	191.2	6900.408	42.2
1994	143.42	21	160.9	3378.9	48.5
1995	180	20.79	248.8	5172.552	33.1
1996	238.6	20.86	337.2	7033.992	43.1
1997	316.21	23.32	428.2	9985.624	40.2
1998	351.96	21.34	487.1	10394.714	46.8
1999	431.17	27.19	947.7	25767.963	61
2000	530.37	21.15	701.1	14828.265	64.1
2001	764.96	21.34	1018	21724.12	52.9
2001	930.49	30.19	1018.2	30739.458	52.5
2003	1,096.54	22.88	1226	28050.88	50.9
2004	1,421.66	20.82	1504.2	31317.444	50.5
2005	1,838.39	19.49	1919.7	37414.953	50.2
2006	2,290.62	18.7	2038	38110.6	81.42
2007	3,668.66	18.36	2450.9	44998.524	41.56
2008	7,899.14	18.7	3240.8	60602.96	37.72
2009	9,889.58	22.62	3453	78106.86	26.39
2010	10,518.17	22.51	4194.6	94420.446	27.39
2011	9,600.02	22.42	4712.1	105645.282	42.02
2012	13,293.64	23.79	4605.3	109560.087	49.72
2013	14,461.41	24.69	5185.3	128025.057	46.23
2014	16,753.00	25.74	4587.4	118079.676	38.27
2015	18,688.42	26.71	4988.9	133253.519	42.35
2016	21,025.24	27.29	5858.6	159881.194	45.95
2017	22,459.18	30.6	6456.7	197575.02	54.79
2018	22,646.33	28.16	7813.7	220033.792	65.04
2019	25,676.87	30.57	9712.2	296901.954	104.2
2020	29,030.01	28.64	10232.3	293053.072	67.6
2021	32,845.67	28.06	12164.1	341324.646	61.2
2022	39,012.34	28.11	14946.2	420137.682	54.93

2023	52,884.78	27.98	19808.4	554239.032	51.97
Source	CBN (₦'Billions)	CBN	CBN(₦'Billions)		CBN