

**MACROECONOMIC DETERMINANTS OF BANKING SECTOR
DEVELOPMENT IN NIGERIA**

BY

**Queen Ahunna BENSON
MGS2104728**

**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF FINANCE,
FACULTY OF MANAGEMENT SCIENCE, UNIVERSITY OF BENIN, BENIN
CITY, EDO STATE. IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF BACHELOR OF SCIENCE (B.sc) DEGREE IN FINANCE**

NOVEMBER, 2025

DECLARATION

I **Queen Ahunna BENSON** do hereby declare that this project is entirely my work and composition. The work embodied in the project has not been submitted in candidature for any degree and is not concurrently being submitted or any other degree.

Queen Ahunna BENSON

Date

CERTIFICATION

We certify that this project titled macroeconomic determinants of banking sector development in Nigeria was submitted by Queen Ahunna BENSON with Matriculation number: MGS2104728, to the Department of Finance, Faculty of Management Science, University of Benin, Benin City, Edo State.

Dr. J. Obayagbona
(Project Supervisor)

Date

Dr. Aigbovo Omoruyi
(Project Coordinator)

Date

Dr. Andrew Izekor
(Head of Department)

Date

DEDICATION

This research work is dedicated to God Almighty for his guidance, strength and wisdom during the period of this study.

ACKNOWLEDGEMENTS

My profound gratitude goes to God Almighty for his grace towards my life during the period of my study in University of Benin.

I wish to appreciate my project supervisor, Dr. J. Obayagbona for his understanding, encouragement and relevant corrections to ensure that this work is up to standard. May God bless you richly.

My appreciation also goes to my father Mr. J. Benson for their financial and moral support as well as prayers, my gratitude goes to my brother Mr. C. Benson for his financial support and love throughout my studies in the University of Benin. My gratitude also goes to my sisters, aunty Amaka, Josephine, uche and Precious for their love and support a through my stay in school.

Special appreciation goes to my H.O.D Dr. A. O. Izekor and all my lecturers in the Department of Finance. My appreciation goes to Dr. Eboighe and Dr. Isibor for their unwavering support, God bless you all.

My appreciation goes to my friends, Confidence, Aisha, Stephanie, Jenisa, Koya and Queen. Thank you all and God bless you.

TABLE OF CONTENTS

Title page	i
Declaration Page	ii
Certification	iii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
Abstract	viii
CHAPTER ONE: INTRODUCTION	
1.1 Background of the Study	1
1.2 Statement of the Research Problem	4
1.3 Research Question	4
1.4 Objectives of the Study	6
1.5 Research Hypotheses	6
1.6 Significance of the Study	7
1.7. Scope of the Study	8
1.8 Limitations of the Study	8
CHAPTER TWO: LITERATURE REVIEW	
2.1. Introduction	9

2.2 Conceptual Review	9
2.2.1 Banking Sector Development	9
2.2.2 Macroeconomic Determinants	10
2.2.3 Inflation Rate and Banking Sector Development	10
2.2.4 Exchange Rate and Banking Sector	12
2.2.5 Inflation Rate and Banking Sector	14
2.2.6 Money Supply (MS) and Banking Sector	15
2.3 Theoretical Review	15
2.3.1 The interest group theory	15
2.3.2 Financial Liberalization Theory	16
2.4 Empirical Review	17
CHAPTER THREE: RESEARCH METHODOLOGY	
3.1 Introduction	26
3.2 Research Design	26
3.3 Population of the Study	26
3.4 Sources of Data	27
3.5 Model Specification	27
3.4 Method of Data Analysis	28

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Introduction	29
4.2 Correlation Analysis	29
4.3 Cointegration Analysis	30
4.4 Regression Analysis	31
4.5 Breusch-Godfrey Serial Correlation LM Test	33
4.6 Normality Test	34

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings	35
5.2 Conclusion	36
5.3. Recommendations	37
References	38
Appendix	42

ABSTRACT

The study examined the macroeconomic determinants of banking sector development in Nigeria over the period 2000 to 2023. The specific objectives of the study were to examine whether exchange rate (EXRT), inflation rate (INFL), money supply (M2), interest rate (INTR), and real gross domestic product (RGDP) significantly affect banking sector development. The ordinary least square econometric technique was utilized in the analysis of data. The results from the analysis revealed exchange rate (EXRT) has significant negative effect on banking sector development (BSD) in Nigeria; money supply (M2) had a significant positive impact on banking sector development; while inflation rate (INFL) had a weak positive effect, real gross domestic product (RGDP) had a weak negative effect on banking sector development in Nigeria. The study therefore conclude that these variables should not be ignored by the Nigerian government and policy makers. They must place special attention on them in order to constantly sustain the current development of the Nigerian banking sector. The study recommends among others that, the government sand indeed monetary authority should formulate appropriate investment policy that will encourage investors to invest more in the economy. This can be achieved by lower the current high level of interest rate or banks' lending rate in the country. By so doing, more people will be able to access loans for onward investment in the economy, and thereby boost the general economic activities in the country.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The concept of the development of the banking sector is a multi-dimensional concept and is not easy to find a single definition of this process as it is an interrelated process that includes improvements in the quantity and quality of financial services. Financial intermediary development, therefore, is the resultant improvement and enhancement in the quality and efficiency of the financial intermediaries. The functions of this part of the financial sector range from capital allocation, mobilisation of savings to monitoring and evaluation of borrowers (Klein & Olivei, 2018). A strong financial sector is also a stable source of funding as compared to capital inflows. These functions enable the financial intermediary sector to contribute to economic development of a country. In Nigeria, the Central Bank of Nigeria (CBN) has implemented various reforms aim at guiding the financial sector into a more competitive, resilient, effective and inclusive sector (CBN, 2020) of all financial intermediaries, deposit money banks play a principal role as far as channelling and mobilising funds is concerned, especially to the private sector, for investment purposes or for other economic activities.

The macroeconomic variables that might influence the banking sector development include economic growth, trade openness, inflation rate and monetary policy rate. This implies that these the actual factors explaining the behaviour of the development of the banking sector in Nigeria. It is assumed that these determinants differ from one country to another according to conditions and characteristics of each country

such as the degree of the development of banking services the stage of economic development, the degree of financial liberalization, and the degree of economic, political and legislative stability.

Any economy's development and growth depend heavily on banks. As a result, it is referred to as the brain of a market economy. Their primary function in deposit mobilization facilitates the flow of surplus funds from household units to the economy's productive sector. Moreover, banks perform these roles of deposit mobilization and credit extension within the confine of macro-economic environment (Emejo & Ekeghe, 2022). And considering the vagaries of the Nigerian macro-economic environment, it is needless to emphasize that Nigerian banks operations take place in a turbulent macroeconomic environment which may impact their performances. Hence, weak macroeconomic environment or performance has the high tendency of incapacitating the banks from performing their mandates, and consequently endangers the deposit mobilization and credit allocation activities of the banks.

Obviously, the Nigerian economy, within which banks operate, suffers from macro-economic instability. Interest rate, which is predominantly the source of income to banks, is not stable and is subject to market demand and supply forces and the monetary policy direction of the CBN; incidentally, the Monetary Policy Rate, which is the anchor rate, has witnessed adjustment twice in 2022 alone by the Central Bank of Nigeria's Monetary Committee, in response to the ravaging inflationary pressure; firstly from

11.5% to 13% in May (Emejo & Ekeghe, 2022), and from 13% to 14% in July (Olawoyin, 2022). Worse still, inflation, is hovering around 19.64% on a year-on-year basis as at July 2022 remains the highest in a decade, and represents about 26% increase from 15.60% inflation rate as at January 2022 (National Bureau of Statistics [NBS], 2022). In the like manner, exchange rate is fluctuating and suffocating in Nigeria on daily basis due to nefarious activities of the black marketers and speculators. The exchange rate of Naira to Dollar as at 19th August, 2022 is N685 in the parallel market (Onye, 2022), and this represents about 19% increase from N575 per Dollar at 1st of January 2022 (Adegbesan, 2022). All these macro-economic indicators have direct bearing to the businesses, including banking and hence, impact on banks' performance. Furthermore, Studies have also revealed that macroeconomic factors like inflation can have an impact on how profitable DMBs are (Adetokun, 2021). Additionally, Ejem, (2020), referencing Adler and Dumas (1980), demonstrated that the actions of banks are subject to exchange rates since the volatility of asset value is dependent on exchange rates. However, Sayedi (2013), however, stated that in the absence of stable interest rates, domestic and international investors will shun the market and resources will be directed elsewhere. According to economic evidence of investment behavior, uncertainty and macroeconomic instability have a large and negative impact on private investment in addition to traditional determinants like historical economic activity growth, real interest rates, and private sector credit.

1.2 Statement of the Research Problem

The empirical analyses of the relationship between banking sector development and macroeconomic indicators are not new in the literature. Indeed, quite a great deal of research has been conducted in this area with conflicting results reported based on the research approach and strategies adopted by existing authors. It is however instructive that preponderance of the existing studies over-concentrate on measuring the development of the banks with financial ratios such as returns on asset, return on equity and returns on capital employed with attendant neglect of other performance metrics (Popoola & Sunday, 2019; Anshu & Ghakhar, 2019; Adetokun, Abdulkamaru & Pam, 2021; Ejem et al., 2020). Although, authors like Adiga, Haruna, Yua and Adigwe (2020) measured banks' development with net interest margin while Ani, Ugwunta and Imo (2012) as well as Floyd (2020) considered return on equity as a measure of banks' development, none of the exiting studies, to the best of my knowledge, has measured banks' development with absolute naira value of profit before or after tax which is another recommended, quick, crucial and efficient indicators of banks' development according to NDIC (2018). Furthermore, existing studies have excessively focused on a handful of the macroeconomic variables such as inflation rate, exchange rate, interest rate and GDP (Ejem, Ogbonna & Ogbulu, 2020; Adetokun et al, 2021; Anshu & Ghakhar, 2019), whereas, there are other macro-economic variables such as GDP per capita income, gross domestic savings and unemployment rate which are crucial and equally influence banks performance. Thus, literature is replete with measuring banks performance with outcome of ratio analysis and some preferred macro-economic indicators; whereas, these

metrics suffer limitation in terms of multiple definition and subjective interpretations, thereby distorting the true wealth of the banks. Consequently, in order to fill the foregoing gaps, the present study focuses on the trends in the existing studies and measures banking sector development with total loan and advances granted to various sectors of the economy. Also, against what is popular in the literature, macro-economic indicators, such as GDP per capita income, Trade openness, Inflation rate, and monetary policy rate are considered in this study. Following the aforementioned problems, this study raises the following questions to aid investigation of the effect of macro-economic variables on banks' development in Nigeria.

1.3 Research Questions

The following research questions are raised to guide the study

- i. What is the effect of exchange rate on banking sector development in Nigeria?
- ii. What is the effect of inflation rate on banking sector development in Nigeria?
- iii. What is the effect of money supply on banking sector development in Nigeria?
- iv. To what extent does interest rate affect Banking sector development in Nigeria?

1.4 Objectives of the Study

The broad objectives to this study is to examine macroeconomic determinants of banking sector development in Nigeria. However, the specific objectives that the study seeks to achieve are to:

- i. Examine the effect of exchange rate on banking sector development in Nigeria.
- ii. Examine the effect of inflation rate on banking sector development in Nigeria.
- iii. Examine the effect of money supply on banking sector development in Nigeria.
- iv. Ascertain the relationship between interest rate and Banking sector development in Nigeria.

1.5 Research Hypotheses

The hypotheses to be validated in this study are stated in the null form and presented below:

Ho1: Trade openness has no significant effect on banking sector development in Nigeria.

Ho2: Inflation rate has no significant effect on banking sector development in Nigeria.

Ho3: Monetary policy rate has no significant effect on banking sector development in Nigeria.

Ho4: There is no significant relationship between interest rate and Banking sector development in Nigeria

1.6 Significance of the Study

Studying the macroeconomic determinants of banking sector development in Nigeria is of immense significance for several interlinked reasons. A healthy and well-functioning banking sector is crucial for economic growth and stability, and

understanding the macroeconomic forces that shape it is essential for effective policymaking and sustainable development.

It makes banks understanding the link Between Macro-economy and Financial Stability in such a way that studying these linkages helps identify potential risks to the banking sector arising from macroeconomic imbalances or shocks. This acts as an early warning system, allowing policymakers to take preemptive measures to mitigate risks and maintain financial stability.

This study would be of great importance to the Nigerian economy as a result of the continuous increase in monetary policies, social-economic unrest, high poverty rate and dwindling productivities economy.

For the academic field, the results from this study should strengthen the theoretical framework of the determinants or the indicators of macro-economic development from the perspective of developing economies like Nigeria. The study contributed to dearth of empirical study on the effect of macro-economic determinants of banking sector development while serving as useful materials for future studies.

1.7 Scope of the Study

The study examines macroeconomic determinants of banking sector development in Nigeria. This study covered a periods of 34 years (1990 to 2024). The choice of this period was based on the several reforms that occurred in the Nigerian banking systems.

Hence carrying out a study of this nature within the period will enable us to have a meaningful evaluation of the extent to which macroeconomic variables have impacted the banking sector development in Nigeria Overtime.

1.8 Limitations of the Study

One of the limitations of this study is data limitations (limited time series date). Reliable macroeconomic and banking sector data are available for only a limited number of years, making it difficult to conduct robust time-series analysis.

Data also were missing and inconsistent across different sources, requiring the researcher to make assumptions or use imputation methods which can introduce bias.

It was difficult to determine the direction of causality between macroeconomic variables. For example, does GDP growth drive banking sector development or does banking sector development drive GDP growth?

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL REVIEW

2.1 Introduction

This chapter is broken down into three sections. They are as follows: conceptual literature, theoretical literature, and empirical literature. The conceptual literature examines some concepts related to the subject matter, the theoretical literature examines some relevant theories related to the topic under study, and the empirical literature examines some previous studies that are closely related to this current study with their findings.

2.2 Conceptual Review

2.2.1 Banking Sector Development

Benyah (2020) defined financial intermediary development as increasing efficiency of allocating financial resources and capital projects through encouraging competition and increasing the potential of financial system. However, the size, structure and efficiency of a financial system determine development. Financial intermediary development is the resultant improvement and enhancement in the quality and efficiency of the financial intermediaries. Banking sector development can be measured with various indicators. These indicators measure different aspects of banking sector development in terms of size, depth, access, to mention just a few. Money and quasi-money (M2) and Liquid liabilities (M3) are indicators of banking sector development that measure the size and depth of the banking sector. M3 is made up of currency outside banks; demand deposits other than those of the central government; the time, savings, and

foreign currency deposits of resident sectors other than the central government; bank and traveller's cheques; and other securities such as certificates of deposit and commercial paper, while M2 comprises of the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government, divided by GDP.

2.2.2 Macroeconomic Determinants

A macroeconomic determinant is an influential fiscal, natural, or geopolitical event that broadly affects a regional or national economy. The macro environment looks at forces surrounding a firm that have the potential to affect the way it operates (Davis & Powell, 2022). In this study, the macroeconomic determinants considered include exchange rate, inflation rate, money supply and interest rate.

2.2.3 Inflation Rate and Banking Sector Development

World Bank (2021) defined inflation as a sustained increase in the general price level of prices for goods and services in an economy. However, besides an imbalance in the demand and supply of money, it could also occur due to changes in production and distribution cost or increase in taxes on products. It is the rate at which the general price level of goods and services changes in an economy. It was measured by annual growth of the GDP deflator (Aluko & Ajayi, 2018). Aluko and Ajayi, (2018) examined the determinants of banking sector development in sub-Saharan African countries using a

panel of 25 countries from 1997 to 2014. The system Generalized Method of Moments (GMM) dynamic panel model estimator. Using a composite index of banking sector development, the estimation results show that population density and simultaneous openness to trade and capital promote banking sector development while financial liberalization hinders banking sector development. Also, the result reveals that inflation, and religion promotes the efficiency of the banking sector while latitude, trade openness, income level, and ethnic diversity reduce banking sector efficiency.

Takyi and Obeng (2023) studied the determinants of financial development in Ghana using the Autoregressive Distributed Lag (ARDL) approach. Using quarterly data from 1988 to 2010, the study found a unique cointegrating relationship between financial development trade openness, inflation, per capita income, reserve requirement and government borrowing. The regression results show that trade openness and per capita income are important determinants of financial development in Ghana. Further, inflation, interest rate, and reserve requirement exerted negative and statistically significant effects on financial development both in the short-run and long-run suggesting that these variables adversely influence financial development in Ghana.

2.2.4 Exchange Rate and Banking Sector

Exchange rate can be described as the price of the domestic currency in terms of other currencies. Obamuyi (2019) noted that the exchange rate in any given economy often plays a prominent role than the interest rate in the transmission mechanism of monetary policy especially for developing countries. An exchange rate has a base currency and a counter currency. In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency. In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency. Most exchange rates use the US dollar as the base currency and other currencies as the counter currency. In his own explanation, Peterson (2017) describes exchange rate as a number that is used to calculate the difference in value between money from one country and money from another country or the ratio at which the principal unit of two currencies may be traded.

Oleka (2022) noted that there are two basic types of exchange rate regime namely; fixed exchange rate and floating exchange rate. A fixed exchange rate is a type of exchange rate regime where a currency value is fixed against either the value of another single currency, or to a basket of other currencies, or to another measure of value, such as gold. It is worthy to reemphasize that a fixed exchange rate is usually used in order to stabilize the value in a predetermined ratio to a different, more stable or more internationally prevalent, currency (currencies). A country's central bank typical uses an open mark mechanism and is committed at all times to buy and sell its currency at a fixed price in order to maintain its pegging ratio and, hence, the reference to which it is pegged.

Whereas a floating regime is one where currencies are allowed to move freely up and down according to changes in its demand and supply, floating exchange rates changes freely and are determine by trading on the force market, (Oleka, 2022).

Commercial banks face substantial risks associated with fluctuations in exchange rates, particularly when engaging in foreign currency transactions. Foreign exchange rate risk arises when the value of a bank's foreign currency-denominated assets and liabilities changes due to exchange rate movements. For example, a sudden depreciation of the naira increases the naira value of foreign-denominated liabilities, potentially straining bank balance sheets (Sabri, 2021).

These risks extend to clients engaged in international trade, whose financial performance can be adversely affected by unfavorable currency movements, thereby increasing the likelihood of loan defaults (Taiwo & Adesola, 2023). Exchange rate volatility refers to frequent and unpredictable fluctuations in currency values. In Nigeria, this volatility is primarily driven by global oil price swings, speculative activities, and fiscal policy inconsistencies (Stancik, 2006). High volatility disrupts economic planning and investment decisions, as businesses and financial institutions face uncertainty in their foreign transactions. Research has shown that countries with high exchange rate volatility often experience reduced investor confidence and economic growth (He et al., 2014).

Exchange rate movements significantly impact the financial performance of commercial banks. Depreciation, for instance, can result in exchange rate losses for banks with

significant foreign liabilities. Furthermore, currency fluctuations influence the operational costs and profitability of clients engaged in foreign trade, indirectly affecting bank loan performance (Osugwu, 2024). Studies have shown that periods of heightened exchange rate volatility are often associated with declining profitability and rising non-performing loans in the banking sector (Pan & Pan, 2024).

2.2.5 Inflation Rate and Banking Sector

Akpokodje (2019) describes inflation rate as a measure of how fast a currency loses its value in a given economy. That is, the inflation rate measures how fast prices for goods and services rise over time, or how much less one unit of currency buys now compared to one unit of currency at a given time in the past. The inflation rate may increase due to massive printing of money, which increases supply in the economy and thus reduces demand. Equally, it may occur because certain important commodities become rarer and thus more expensive. Central banks attempt to control the inflation rate by increasing and decreasing the money supply. The inflation rate is important to fixed-income securities, as the returns on these securities may not keep up with inflation, and thus result in a net loss for the investor.

2.2.6 Money Supply (MS) and Banking Sector

According to Peterson (2018) Broad money is the definition of the Money Supply which includes a wide scope for the definition of money including both notes and coins, but also more illiquid forms of money such as bank deposits, treasury bills, and gilts. These are considered 'near money' because it can easily be changed to cash. Broad money includes notes and coins but also saving accounts and deposits in a savings account. Broad money can also include Treasury Bills and gilts. These financial securities are seen as 'near money' because they are more illiquid than cash and instant saving accounts. Broad money does not include assets, such as long-term dated securities and shares. Although these can be sold, they are not included in terms of broad money because they fall in the category of assets rather than money. Broad money includes $M1+DD+SD$. Broad money tends to be less stable than narrow definition of money (Tomola, Adebisi and Olawale 2010).

2.3 Theoretical Review

2.3.1 The interest group theory

The interest group theory was used to explain the macroeconomic determinants of banking sector development. Rajan and Zingalas (2003) postulated the interest group theory of financial sector development, otherwise known as the simultaneous openness hypothesis which identifies openness–trade and financial openness–as a determinant of banking sector development. The theory posits that openness would lead to banking sector development when the economy does not choose trade openness or financial

openness in isolation of each other. Financial sector development occurs when an economy is simultaneously open to both trade and capital. Rajan and Zingales (2003) argued that financial sector development is as a result of interest groups' stance on financial sector development. Interest groups, particularly incumbent firms often stand against financial sector development because potential competitors would gain entry into the domestic market due to greater financial access. Therefore, incumbent firms do not support financial sector development because it encourages competition. Incumbent firms in a closed economy benefit from low levels of financial sector development caused by financial repressive policies because access to finance by potential competitors would be limited (Hauner, Prati, & Bircan, 2013).

2.3.2 Financial Liberalization Theory

This study also adopted the Financial Liberalization Theory which was propounded by McKinnon-Shaw, whose framework advocated for the implementation of financial liberalization policies as a way of increasing financial savings mobilization, improving efficiency with which resources are allocated among alternative investment projects and thereby enhancing economic growth. The Financial Liberalization Theory put forth by McKinnon and Shaw (1973) postulate that interest rate regulations usually lead to low and negative real interest rates, which stunts economic growth of developing countries. The financial repression which causes low interest rate discourages savings and thus, shrinks investment. The quality of investment will also be low because the projects

that would be undertaken under a regime of repression would have a low rate of yield. They advocated that interest rate deregulation would increase interest rate rise which will encourage both savings and investment thereby boosting economic growth.

2.4 Empirical Review

Sodokin (2023) with an emphasis on institutional quality examined the connection between banking risk and prudential regulation in the West African Economic and Monetary Union. Panel data collected between 2006 and 2019 from 63 banks were used in the empirical analysis. The main conclusions show that strict banking laws and oversight improve banks' stability. The risk of bank insolvency is decreased by capital rules, activity limitations, and supervisory bodies. The findings indicated that strong oversight and strict adherence to regulations are encouraged by a positive institutional environment, which increases the effectiveness of these measures. Overall, this analysis finds that, in West African Economic and Monetary Union countries, prudential measures have a moderating effect on risk, provided that they are implemented within strong institutional frameworks. The result as obtained in this study conducted by Sodokin (2023) is found to be consistent with some previous studies documented by Okechukwu (2023); Yen et al., 2023; Ashikuzzaman (2022); Ikue et al. (2022); Ibrahim et al. (2021) who found significant effects. However, on the contrary, the study of Sodokin et al. (2023) was not consistent with some other studies as carried out by Bashiru et al. (2023); Foglia (2022); Avkiran (2022) who documented negative effects.

Belanova (2023) studied the effect of inflation rates and other macroeconomic variables on the performance of businesses. An ex-post facto research design was adopted for the study using data obtained from the financial records of the businesses selected for the study. A regression analysis showed that macroeconomic variables of inflation rates, exchange rates and interest rates had a negative effect on the performance of businesses as firms found these variables eat deep into the overheads of the businesses tested in the study. The result as obtained in this study conducted by Belanova (2023) was found to be consistent to some previous studies documented by Anita et al, 2022; Ashikuzzaman, 2022; Shehzadi et al., 2022; Anthony-Orji et al., 2021).

However, on the contrary, this study is not consistent with some other studies as carried out by Zulkifli and Ahmad (2022); Harimurti et al. (2022); Zunic et al. (2021); Gakpo et al. (2021) who reported negative effects.

Egiyi (2022) sought to determine the extent of impact of non-performing loans, macroeconomic variables on the credit performance of banks in Nigeria. An ex-post facto research approach was employed for the study, using secondary data extracted from the financial statements of the banks selected for the study. Purposive sampling technique was used for the sample determination of 10 banks listed in Nigeria. The descriptive statistics established the mean, median and standard deviation of the study, while regression analysis confirmed that each of the macroeconomic variables of interest rates and inflation rated had a negative influence on the banks' credit performance, while

banks specific factors had a positive and significant effect on banks' credit performance for the banks selected and tested. The result as obtained in this study conducted by Egiyi (2022) is found to be consistent to some previous studies documented by Foglia (2022); Engle (2022); Ashogbon et al. (2023); Corbet and Larkin (2022); Ibitomi and Micah (2021; Aysan and Disli (2019); Mpofo and Nikolaidou (2018) who documented negative effects. However, on the contrary, this study is not consistent with some other studies as carried out by Zhen et al. (2017); Faroq and Nasir (2017); Azhari and Kadir (2018); Bustamante et al. (2019); Avkiran (2022) who also reported significant effects.

Wang (2019) studied the influence of nonperforming loans of the listed commercial banks and business management on foreign direct investment in China. The idea was to investigate comparatively business operations in China from the point of nonperforming loans effect on obtaining loans for future business operations funding by the banks and the likely implications on foreign direct investments. The study used an expo facto method, as past records of financial and annual record of nonperforming loans profile of the banks were sourced from the Chinese database. The regression analysis showed that nonperforming loans had a negative influence on banks performance and foreign direct investment in the commercial banks in China. The result as obtained in this study conducted by Wang (2019)) was found to be consistent to some previous studies documented by Anita et al. (2022); Ashikuzzaman (2022); Shehzadi et al. (2022); Barzrzfshan et al. (2021); Anthony-Orji et al. (2021). However, on the contrary, this study is not consistent with some other studies as carried out by Zulkifli and Ahmad

(2022); Harimurti et al. (2022); Zunic et al. (2021); Gakpo et al. (2021) who reported negative effects.

Azhari and Kadir (2018) studied bank specific factors, profitability, board characteristics and debt restructuring among banks listed in Malaysia. The aim of the study was to examine the impact of bank specific factors and macroeconomic variables on the performance of the banks. An ex-post facto research approach was adopted, and data were sourced from the database of the sectorial performance in Malaysia. The ordinary least squared model adopted was regressed and the regression analysis showed that bank specific factor had a significant effect on the performance of the banks investigated. The result as obtained in this study conducted by Azhari and Kadir (2018) is found to be consistent to some previous studies documented by Foglia (2022); Engle (2022); Ashogbon et al. (2023); Corbet and Larkin (2022); Ibitomi and Micah (2021); Aysan and Disli (2019); Mpofu and Nikolaidou (2018) who documented negative effects.

However, on the contrary, this study is not consistent with some other studies as carried out by Zhen et al. (2017); Faroq and Nasir (2017); Azhari and Kadir (2018); Bustamante et al. (2019); Avkiran (2022) who also reported significant effects. Asafo (2018) empirically investigated macroeconomic variables and banks specific factors and non-performing loans on the performance of banks in Ghana. An ex-post facto model was explored by the study whereas data were extracted from the financial records of the study for a spanning period of 10 years. The panel data estimation demonstrated an empirical

evidence that macroeconomic variables of inflation rates and interest rates had a negative and insignificant effects on the performance of banks while bank specific factor had a positive and significant effect on the performance of banks in Ghana for the time investigated. The result as obtained in this study conducted by Asafo (2018) was found to be consistent with some previous studies documented by Okechukwu (2023); Yen et al., 2023; Ashikuzzaman (2022); Ikue et al. (2022); Ibrahim et al. (2021) who found significant effects. However, on the contrary, the study of Asafo (2018) was not consistent with some other studies as carried out by Bashiru et al. (2023); Foglia (2022); Avkiran (2022) who documented negative effects.

Adusei (2018) examined the possible determinants of non-performing loans and banks specific factors on performance of banks listed in Ghana. The study employed secondary data sourced and extracted from the financial and accounting performance of the banks for the period of 16 years covering 1998 to 2013. The aim of the study was to examine the likely implications and effect of non-performing loans and banks specific factors on the performance of banks in Ghana. Inferential (multiple regression analysis) was adopted for the study and the result showed that non-performing loans exerted a negative influence on performance of the banks. The result as obtained in this study conducted by Adesei (2018) is found to be consistent to some previous studies documented by Foglia (2022); Engle (2022); Ashogbon et al. (2023); Corbet and Larkin (2022); Ibitomi and Micah (2021); Aysan and Disli (2019); Mpofu and Nikolaidou (2018) who documented negative effects. However, on the contrary, this study is not consistent

with some other studies as carried out by Zhen et al. (2017); Faroq and Nasir (2017); Azhari and Kadir (2018); Bustamante et al. (2019); Avkiran (2022) who also reported significant effects.

Bordalo et al. (2018) studied credit cycles and banks specific factors and their influence bank performance of selected banks. The study employed an ex-post facto research method and employed data collected from the secondary sources extracted from the financial statements of the banks for a period of 5 years. Multiple regression analysis was used and the estimation showed that banks' specific factors exerted a significant effect on the performance of the banks investigated. The result as obtained in this study conducted by Bordalo et al. (2018) is found to be consistent to some previous studies documented by Foglia (2022); Engle (2022); Ashogbon et al. (2023); Corbet and Larkin (2022); Ibitomi and Micah (2021); Aysan and Disli (2019); Mpofu and Nikolaidou (2018) who documented negative effects. However, on the contrary, this study is not consistent with some other studies as carried out by Zhen et al. (2017); Faroq and Nasir (2017); Azhari and Kadir (2018); Bustamante et al. (2019); Avkiran (2022) who also reported significant effects.

Abugamea (2018) investigated the implications of banks specific factors and macroeconomic variables on the performance of banks in Palestine. Secondary documented panel related data was employed for the study as data were extracted from the database for 21 years covering 1995 to 2015. Multiple regression analysis using panel

data analysis and fixed effect model were adopted for the study. The multiple regression analysis showed that macroeconomic variable of inflation rates, exchange rate had negative effects on the bank performance. However, banks non-interest income and operational efficiency had a significant effect on banks performance.

The result as obtained in this study conducted by Abugamea (2018) is found to be consistent to some previous studies documented by Foglia (2022); Engle (2022); Ashogbon et al. (2023); Corbet and Larkin (2022); Ibitomi and Micah (2021); Aysan and Disli (2019); Mpofu and Nikolaidou (2018) who documented negative effects. However, on the contrary, this study is not consistent with some other studies as carried out by Zhen et al. (2017); Faroq and Nasir (2017); Azhari and Kadir (2018); Bustamante et al. (2019); Avkiran (2022) who also reported significant effects.

He, Kelly, and Manela (2014) examined the impact of exchange rate fluctuations on bank profitability in emerging markets using a dataset spanning 20 years. Their findings revealed that banks with significant foreign currency exposures faced substantial profitability declines during periods of exchange rate volatility. While the study provides valuable insights into the challenges faced by banks in volatile environments, its broad focus on emerging markets limits its applicability to specific country contexts such as Nigeria. The unique dynamics of Nigeria's economy such as its dependence on oil exports, regulatory peculiarities, and the role of the informal sector may introduce

nuances that are not addressed in this study. Thus, while the findings are broadly relevant, a country-specific analysis could provide more actionable insights.

Similarly, Osuagwu (2014) conducted an analysis of Nigerian banks and found that exchange rate volatility negatively impacts return on equity (ROE). The study employed regression models to establish a strong negative correlation between exchange rate movements and profitability metrics. However, the reliance on secondary data may limit the robustness of the findings. Internal bank practices, such as risk management policies and client-specific considerations, are not accounted for, which could affect the observed relationships. Future research integrating primary data and qualitative insights could address these limitations and provide a more nuanced understanding.

Taiwo and Adesola (2013) investigated the relationship between exchange rate volatility and non-performing loans (NPLs) in Nigeria. Their research found that periods of naira depreciation were associated with higher loan defaults, particularly in import-dependent sectors. This underscores the indirect impact of exchange rate movements on banking stability and profitability. However, the study does not consider the adaptive measures that banks may employ, such as loan restructuring or risk-sharing mechanisms, which could mitigate the adverse effects of exchange rate fluctuations. This omission could result in an overestimation of the impact of exchange rate volatility on loan performance.

Pan and Pan (2014) explored similar dynamics in China and concluded that proactive risk management strategies, such as using financial derivatives, significantly reduced the impact of exchange rate volatility on loan performance. While the study highlights the critical role of hedging instruments, it does not adequately address the costs associated with implementing such strategies. For banks in developing economies like Nigeria, limited access to derivatives and the associated costs may hinder the adoption of these approaches, reducing the practical relevance of the findings.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter focuses on the research methods adopted by this study to evaluate the macroeconomic determinants of banking sector development in Nigeria. The procedures includes the research design, nature and sources of data, techniques of data analysis and model specification.

3.2 Research Design

In this study, ex-post facto design was adopted in obtaining, analyzing and interpreting data relating to the objectives of this study. This design enables the researcher to observe variables over a long period of time and of which the researcher has not ability to manipulate the data because it has already occurred/existed.

3.3 Population and sample

This study on the macroeconomic determinants of banking sector development in Nigeria over the period 2000 to 2024. The population of the study which is also the sample size is the Nigerian banking sector. This period was chosen largely due to availability of data, and again, the period also witnessed the reconsolidation of the Nigerian banking system as well as the numerous policies implementations that occurred during the post consolidation era. Thus, data obtained within these periods are expected to be good enough to enable the researcher arrive at valid conclusions as to the extent to

which foreign remittances inflows has impacted the overall performance of listed deposit money banks performance in Nigeria overtime.

3.4 Sources of Data

Secondary data sources was used in this study and the respective data (2000 to 2024) were obtained from the Central Bank of Nigeria Statistical Bulletin (2024) and the World Bank Data.

3.5 Model Specification

The model for this study follows a simple linear form which is generally specified as follows:

$$BSD = f(EXRT, INFL, M2, INTR, RGDP) \dots\dots\dots 3.1$$

Model 3.1 above is restated in econometric form as follows:

$$BSD_t = \alpha_0 + \alpha_1 EXRT_t + \alpha_2 INFL_t + \alpha_3 M2_t + \alpha_4 INTR_t + \alpha_5 RGDP_t + U_t \dots\dots\dots 3.2$$

Where:

- BSD = Banking Sector Development
- EXRT= Exchange Rate
- INFL = Inflation Rate
- M2 = Money Supply
- INTR = Interest Rate
- RGDP = Real Gross Domestic Product
- U_{it} = is the error term
- Apriori Expectations are: $\alpha_3, \alpha_5 > 0$; $\alpha_1, \alpha_2, \alpha_4 < 0$

3.4 Method of Data Analysis

The main method of analysis employed in this study is the ordinary least square (OLS). We perform also the Ordinary Least Squares (OLS) estimation technique because, it is the Best, Linear Unbiased Estimator. It is based on the minimization of the sum of squares residuals of the model. Hence, the estimation technique of time series data that is employed in this study is the Ordinary Least Squares OLS) method that easily estimates the behavioural relationships among time series variables. The coefficients obtained from the estimation are then used to verify the working hypotheses of the study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter examined the macroeconomic determinants of banking sector development in Nigeria using the method of analysis earlier established in chapter three. The correlation coefficient test was employed to test for the background properties of the data. Lastly, the ordinary least square (OLS) method was employed for the main analysis of the study.

4.2 Correlation Analysis

The correlation analysis in Table 4.1 was employed to examine the macroeconomic determinants of banking sector development in Nigeria. The results of the correlation matrix revealed that banking sector development (BSD) has a weak negative correlation value of -0.05854 with exchange rate (EXRT); as well as a weak positive correlation inflation rate (INFL), money supply (M2), interest rate (INTR), and real gross domestic product (RGDP). Indeed, there is a high positive correlation among exchange rate (EXRT), interest rate (INTR), money supply (M2) and real gross domestic product (RGDP) respectively. There is also a high negative and positive correlation among interest rate (INTR), money supply (M2) and real gross domestic product (RGDP). Thus, we conclude that, the correlation matrix results obtained in Table 4.2 below indicate the absence of multicollinearity among the hypothesized variables in the model. Hence, the results are valid for policy decisions.

Table 4.1: Pairwise Correlation Matrix

	BSD	EXRT	INFL	INTR	M2	RGDP
BSD	1					
EXRT	-0.05854	1				
INFL	0.00882	-0.07798	1			
INTR	0.05513	0.66637	0.10863	1		
M2	0.08015	0.96885	-0.13890	0.69810	1	
RGDP	0.10530	0.92312	-0.03676	0.72339	0.97417	1

Source: Author's Compilations (2025)

4.3 Cointegration Analysis

Having established that the series in the analysis are not stationary in their levels, we move on to determine if they are cointegrated. The Johansen system of cointegration method was employed as indicated in Table 4.2 below. The eigenvalue test (λ -max) and the trace test statistics indicate that there are about four (4) significant cointegrating vectors of macroeconomic determinants banking sector development in Nigeria. This implies that a long run relationship exists among these hypothesized variables in Nigeria.

Table 4.2: Johansen Multivariate Cointegration Tests Results

<i>Trace Test</i>				<i>Maximum Eigenvalue Test</i>			
Null Hypothesis	Test Statistic	Critical Value	Prob.	Null Hypothesis	Test Statistic	Critical Value	Prob.
$r = 0^*$	165.6749	95.75366	0.0000	$r = 0^*$	69.60974	40.07757	0.0000
$r \leq 1$	96.06520	69.81889	0.0001	$r \leq 1$	53.04949	33.87687	0.0001
$r \leq 2$	43.01571	47.85613	0.1322	$r \leq 2$	21.79453	27.58434	0.2311
$r \leq 3$	21.22118	29.79707	0.3440	$r \leq 3$	13.09266	21.13162	0.4437
$r \leq 4$	8.128516	15.49471	0.4518	$r \leq 4$	8.104643	14.26460	0.3682
$r \leq 5$	0.023873	3.841466	0.8771	$r \leq 5$	0.023873	3.841466	0.8771

Source: Author's Compilations (2025).

4.4 Regression Analysis

The macroeconomic determinants of banking sector development in Nigeria was analyzed using the ordinary least squares (OLS) econometric technique. The R-Bar squared criterion was used for the selection of the parsimonious equation. The results as shown in Table 4.3 show a strong diagnostic outcome of R-squared value of 0.48, which indicates that over 48 percent of the systematic variation in banking sector development (BSD) in the long term is explained by movements in the explanatory variables. Even the R-Bar squared value of 0.29 is low.

Analyzing the individual coefficients of the variables in terms of their significance and impact reveal that the coefficient of exchange rate (EXRT) has

significant negative effect on banking sector development (BSD) in Nigeria. That means that EXRT is a potent factor in the determination of banking sector development. This suggests that as exchange rises by the day, banking sector development (BSD) decreases in the long run in Nigeria by approximately -0.001005%. Those of inflation rate (INFL) failed the 5 percent significance level, suggesting that INFL does not play any significant role in determining banking sector development in Nigeria.

The coefficient of interest rate (INTR) had a weak negative relationship with banking sector development. The variable failed the 5 percent significance level. This also presupposes that INTR does not play any significant role in banking sector development. Those of money supply (M2) had a significant positive impact on banking sector development, as the variable passed the 5 percent significance level. This presupposes that M2 is a potent factor for determining banking sector development in the country. On the other hands, real gross domestic product (RGDP) had a weak inverse effect on banking sector development in Nigeria. That presupposes that the level of economic activities in the country does not play any relevant role in the development of banking sector. Even the negative sign is an indication of the fact that it has the tendency of reducing the performance of banking sector development.

The D.W. statistic value of 1.75 is appropriate and it indicates the absence of multicollinearity in the long run model in Nigeria.

Table 4.3: Macroeconomic Determinants of Banking Sector Development in Nigeria (OLS)

OLS Regression			
Variables	Coefficient	T-Ratio	Prob.
Constant	0.296781	3.210912	0.0055
EXRT	-0.001005	-2.375569	0.0304*
INFL	0.003507	1.151325	0.2665
INTR	-0.003445	-0.868211	0.3981
M2	1.21E-05	2.093919	0.0525*
RGDP	-1.18E-06	-1.166074	0.2607
BSD(-1)	0.400168	1.934931	0.0709
R ² = 0.48	$\bar{R}^2 = 0.29$		D.W.= 1.75

Source: Author’s Compilations (2025). Note: *Sig at 5% level

4.5 Breusch-Godfrey Serial Correlation LM Test

To test whether the residuals from the model are serially correlated in the estimation, we used the Breusch-Godfrey Serial Correlation LM Test as indicated in Table 4.5 below. Indeed, from the result, since the null hypothesis is that the residual are serially uncorrelated, and the F-Statistic p-value of 0.3898 indicates that we will fail to reject the null hypothesis. Therefore, the residuals are serially uncorrelated.

Table 4.5: Breusch-Godfrey Serial Correlation LM Test

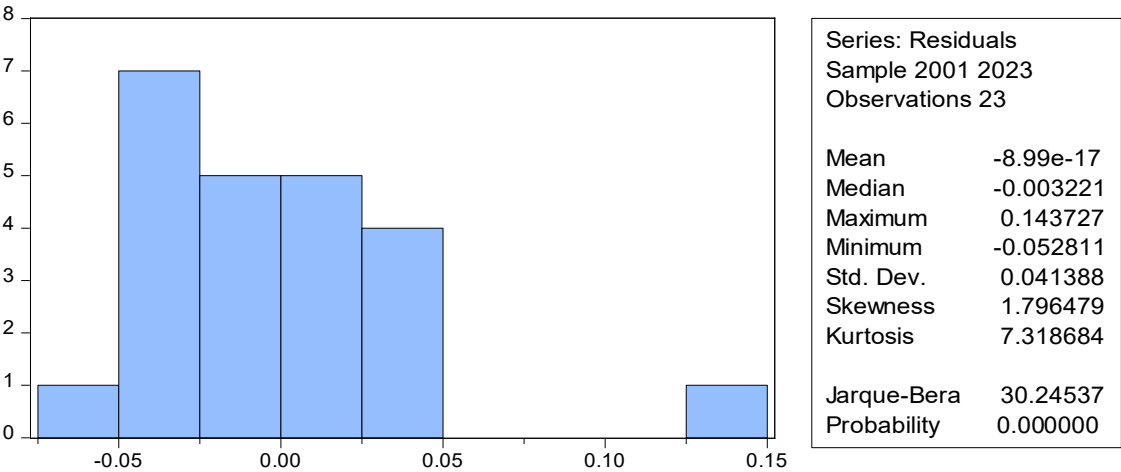
F-statistic	0.784475	Prob. F(1,15)	0.3898
Obs*R-squared	1.143080	Prob. Chi-Square(1)	0.2850

Source: Author’s Compilation (2025)

4.6 Normality Test

To test for normality test, we employed the histogram normality test (HNT). According to this test, the null hypothesis is that the residual are normally distributed, while the alternative hypothesis is that the residual are not normally distributed. Thus, if the probability value of the Jarque-Bera statistics is greater than 0.05 (5%), then we accept the null hypothesis that the residual are normally distributed; but if the probability value of the Jarque-Bera statistics is less than 0.05 (5%), then we reject the null hypothesis that the residual are not normally distributed. Therefore, since the probability value (0.000) of the Jarque-Bera statistics in Figure 4.1 is less than 0.05 (5%), we conclude that the data set are not normally distributed.

Figure 4.1: Histogram Normality Test



Source: Author’s Computations (2025) from Eview 10.0

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The study empirically investigated macroeconomic determinants of banking sector development in Nigeria. Thus, on the basis of the analysis of data in chapter four, the following specific findings are made:

- (i) That exchange rate (EXRT) has significant negative effect on banking sector development (BSD) in Nigeria. That means that EXRT is a potent factor in the determination of banking sector development. This suggests that as exchange rises by the day, banking sector development (BSD) decreases in the long run in Nigeria by approximately -0.001005%.
- (ii) That inflation rate (INFL) failed the 5 percent significance level, suggesting that INFL does not play any significant role in determining banking sector development in Nigeria.
- (iii) That interest rate (INTR) had a weak negative relationship with banking sector development. The variable failed the 5 percent significance level. This also presupposes that INTR does not play any significant role in banking sector development.
- (iv) That money supply (M2) had a significant positive impact on banking sector development, as the variable passed the 5 percent significance level. This presupposes that M2 is a potent factor for determining banking sector development in the country.

(v) That real gross domestic product (RGDP) had a weak inverse effect on banking sector development in Nigeria. That presupposes that the level of economic activities in the country does not play any relevant role in the development of banking sector. Even the negative sign is an indication of the fact that it has the tendency of reducing the performance of banking sector development

5.2 Conclusion

This study so far has examined the macroeconomic determinants of banking sector development in Nigeria over the period 2000 to 2023 using the ordinary least squares (OLS) econometric technique. Five related macroeconomic factors such as exchange rate (EXRT), inflation rate (INFL), money supply (M2), interest rate (INTR), and real gross domestic product (RGDP) were used as independent or explanatory variables. The results from the analysis revealed exchange rate (EXRT) has significant negative effect on banking sector development (BSD) in Nigeria; money supply (M2) had a significant positive impact on banking sector development; while inflation rate (INFL) had a weak positive effect, real gross domestic product (RGDP) had a weak negative effect on banking sector development in Nigeria. The study therefore conclude that these variables should not be ignored by the Nigerian government and policy makers. They must place special attention on them in order to constantly sustain the current development of the Nigerian banking sector.

5.3 Recommendations

From the findings of the study, the following specific recommendations for policy decisions are made:

First, the significant positive relationship between money supply (M2) and banking sector development (BSD) suggests the need for regulators or monetary authority in Nigeria (CBN) to either sustain current policy on MPR or improve on it so that the current level of banking sector development (BSDEV) in terms of total amount of money in circulation in the country will be sustained or guaranteed.

Secondly, the central bank of Nigeria (CBN) should constantly initiate and implement the right policy rate that will enable it to regulate interest rates and reserve requirements through OMO in order to stimulate borrowing to promote economic activities thereby reducing unemployment rate, protect the value of the Naira and maintain constant economic growth at large.

Lastly, the government and indeed monetary authority should formulate appropriate investment policy that will encourage investors to invest more in the economy. This can be achieved by lower the current high level of interest rate or banks' lending rate in the country. By so doing, more people will be able to access loans for onward investment in the economy, and thereby boost the general economic activities in the country.

References

- Aburime, T. U., & Uche, C. U. (2018). Impact of share capitalization on bank profitability in Nigeria. *European Journal of Scientific Research*, 19 (3), 438452. Available at <http://www.eurojournals.com/ejsr.htm>.
- Addae, A. A.; Nyarko-Baasi, M. & Tetteh, M. C. (2024). Effect of exchange rate movements in Ghanaian banks. *Journal of Finance and Accounting*, 3(3), 62-71.
- Adegbesan, E. (2022). Forex turnover in I & E rises 152% to \$2.16bn in January. Retrieved from www.vanguardngr.com/2022/02/forex-turnover-in-i-e-rises-152-to-2-16bn-in-january/ and www.vanguardngr.com/2022/02/forex-turnover-in-i-e-rises-152-to-2-16bn-in-january/.
- Adetokun, A.; Abdulkamaru, S. & Pam, D. F. (2021). Performance of Nigeria deposit money banks and macroeconomic imbalances: A VECM approach. *International Journal of Research and Innovation in Applied Science* 6(2), 192-200.
- Adidu A. & Olanye A. (2016). Basic small business entrepreneurship-A modern approach. Agbor: Royal Pace Publisher.
- Adiga, D. L.; Haruna, H.A.; Yua, H. & Adigwe (2020). Effect of selected macroeconomic variables on the profitability of deposit money banks in Nigeria:2007-2018. *Journal of Finance and Economics*, 8(4), pp. 152-160
- Aluko, O., & Ojo, M. A. (2018). Determinants of banking sector development: Evidence from Sub-Saharan African countries. *Borsa Istanbul Review*, 18 (2), 122 –139.
- Arestis, P., & Demetriade, P. (1997). Financial development and economic growth: Assessing Benyah, F. E. K. (2010). Determinants of financial development: A focus on African countries. *Thesis submitted in partial fulfilment of a master's degree*: Jonkoping University. Retrieved from <http://hj.diva-portal.org/smash/get/diva2:337616/FULLTEXT01>
- Donia, L. (2022). Determinants of banking sector development in emerging economies: Panel estimation, (*Unpublish Thesis*), The American University in Cairo School of Business.
- Gezae, A. (2024). *Determinants of banking sector development in Ethiopia. A thesis submitted to the Department of Accounting and Finance*, Addis Ababa University Addis Ababa, Ethiopia.
- Guo, K., & Stepanyan, V. (2019). Determinants of bank credit in emerging market economies, *IMF working paper*, no. 11/51. 12-24

- Hauner, D., Prati, A., & Bircan, C. (2023). The interest group theory of financial development: Evidence from regulation. *Journal of Banking & Finance*, 37(3), 895 -906.
- Imran, K., & Nishat, M. (2023). Determinants of bank credit in Pakistan: A supply side approach, *Economic Modelling*, 35(5), 384-390.
- Kakhkharov, J., & Rohde, N. (2019). Remittances and financial development in transition economies. *Empirical Economics*, 6(5), 1-33.
- Kim, D. H., Lin, S.C., & Suen, Y. B. (2020). Dynamic effects of trade openness on financial development. *Economic Modelling*, 27(3), 254-261.
- Klein, M. W., & Olivei, G. P. (2018). Capital account liberalisation, financial depth and economic growth. *Journal of International Money and Finance*, 27(6), 861-875.
- Majeed, S. & Iftikhar, S. F. (2020). Modeling the relationship between banking sector credit and economic growth: A Sectoral Analysis for Pakistan. *Journal of Economic Cooperation and Development*, 41,(1), 145-178.
- Mushtaq, A., Arshed, N., & Hassan, M. (2019). Sources of banking sector development: Case of Pakistan. *Journal of Finance and Accounting Research*, 1(2), 18 -28. Retrieved from <https://ojs.umt.edu.pk/index.php/jfar/article/view/96>.
- Polat, B. (2018). The impact of workers' remittances on financial market development: a case study for developing countries. *Journal of Business Research*, 10(2), 27 –36.
- Akinlo, A. E., & Lawal, A. K. (2021). Impact of exchange rate on industrial production in Nigeria 1986–2010. *International Business and Management*, 10(1), 104–110.
- Cassel, G. (2019). Abnormal deviations in international exchanges. *Economic Journal*, 28(112), 413–415.
- Central Bank of Nigeria (CBN). (2022). Annual Statistical Bulletin. Abuja: CBN.
- Central Bank of Nigeria (CBN). (2023). Exchange Rate Policy Framework. Abuja: CBN.
- Frenkel, J. A., & Levich, R. M. (1975). Covered interest arbitrage: Unexploited profits? *Journal of Political Economy*, 83(2), 325–338.
- He, Z., Kelly, B., & Manela, A. (2014). Intermediary asset pricing: Evidence from exchange rate risk. *Journal of Finance*, 69(6), 2655–2686.
- Keynes, J. M. (1923). A tract on monetary reform. Macmillan.

- Obadan, M. I. (2022). Foreign exchange markets and balance of payments: Elements, policies, and Nigerian experience. NCEMA Monograph Series, 11(1).
- Ongore, V. O., & Kusa, G. B. (2023). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237–252.
- Osuagwu, E. S. (2024). Determinants of bank profitability in Nigeria. *International Journal of Economics and Finance*, 6(12), 46–55.
- Pan, S., & Pan, Y. (2024). Foreign exchange risk management in emerging markets: Evidence from China. *Emerging Markets Review*, 18(4), 57–68.
- Popper, H. (2016). Exchange rate exposure of banks. *Journal of International Money and Finance*, 15(5), 853–865.
- Sabri, H. (2021). Foreign exchange risk management practices in Jordanian firms. *International Business Research*, 4(2), 219–226.
- Stancik, J. (2016). Exchange rate volatility in emerging markets. *Czech Journal of Economics and Finance*, 56(11–12), 520–536.
- Taiwo, J. N., & Adesola, I. O. (2023). Exchange rate volatility and bank performance in Nigeria. *Global Journal of Management and Business Research*, 13(7), 36–42.
- Taylor, M. P., & Taylor, A. M. (2024). The purchasing power parity debate. *Journal of Economic Perspectives*, 18(4), 135–158
- Kaputo, C. C. (2021). Macroeconomic policy and domestic private investment: The case of Zambia, 1980-2008. An unpublished M.A. Dissertation, submitted to the Department of Economics, University of Zambia, Lusaka
- Kalu, C. U., and Onyinye, M. O. (2025). Domestic private investment and economic growth in Nigeria: Issues and further consideration. *International Journal of Academic Research in Business and Social Sciences*, 5(2): 302-313.
- Mckinnon, R. I. Shew I. (1973). *Money and Capital in Economic Development*, Washington D.C: Brookings Institution.
- Moore, T., (2019). A critical appraisal of McKinnon’s Complementary hypothesis: Does the real rate of return on money matter for investment in developing countries? Department of Economics and Finance, Working Paper No. 09-11, Brunel University, London.

Obamuyi, T.M. (2019). An investigation of the Relationship between Interest Rates and Economic Growth in Nigeria, (1970-2006). *Journal of Economic and International Finance*

APPENDICES

Dependent Variable: BSD
 Method: Least Squares
 Date: 10/16/25 Time: 13:23
 Sample (adjusted): 2001 2023
 Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.296781	0.092429	3.210912	0.0055
EXRT	-0.001005	0.000423	-2.375569	0.0304
INFL	0.003507	0.003046	1.151325	0.2665
INTR	-0.003445	0.003968	-0.868211	0.3981
M2	1.21E-05	5.78E-06	2.093919	0.0525
RGDP	-1.18E-06	1.01E-06	-1.166074	0.2607
BSD(-1)	0.400168	0.206812	1.934931	0.0709

R-squared	0.483096	Mean dependent var	0.281647
Adjusted R-squared	0.289258	S.D. dependent var	0.057567
S.E. of regression	0.048532	Akaike info criterion	-2.967386
Sum squared resid	0.037686	Schwarz criterion	-2.621801
Log likelihood	41.12494	Hannan-Quinn criter.	-2.880472
F-statistic	2.492258	Durbin-Watson stat	1.758372
Prob(F-statistic)	0.067614		

	BSD	EXRT	INFL	INTR	M2	RGDP
BSD	1	0.05854605975 105305	0.00882890668 590847	0.05513154745 998316	0.08015197341 835824	0.10530612559 6553
EXRT	0.05854605975 105305	1	0.07798856557 44495	0.66637089553 89488	0.96885156442 44894	0.92312744351 15436
INFL	0.00882890668 590847	0.07798856557 44495	1	0.10863202262 05964	0.13890181765 43075	0.03676206699 525342
INTR	0.05513154745 998316	0.66637089553 89488	0.10863202262 05964	1	0.69810835398 46781	0.72339170701 89117
M2	0.08015197341 835824	0.96885156442 44894	0.13890181765 43075	0.69810835398 46781	1	0.97417285621 317
RGDP	0.10530612559 6553	0.92312744351 15436	0.03676206699 525342	0.72339170701 89117	0.97417285621 317	1

Date: 10/16/25 Time: 13:27
Sample (adjusted): 2002 2023
Included observations: 22 after adjustments
Trend assumption: Linear deterministic trend
Series: BSD EXRT INFL INTR M2 RGDP
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.957747	165.6749	95.75366	0.0000
At most 1 *	0.910305	96.06520	69.81889	0.0001
At most 2	0.628669	43.01571	47.85613	0.1322
At most 3	0.448504	21.22118	29.79707	0.3440
At most 4	0.308155	8.128516	15.49471	0.4518
At most 5	0.001085	0.023873	3.841466	0.8771

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.957747	69.60974	40.07757	0.0000
At most 1 *	0.910305	53.04949	33.87687	0.0001
At most 2	0.628669	21.79453	27.58434	0.2311
At most 3	0.448504	13.09266	21.13162	0.4437
At most 4	0.308155	8.104643	14.26460	0.3682
At most 5	0.001085	0.023873	3.841466	0.8771

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b=I):

BSD	EXRT	INFL	INTR	M2	RGDP
-15.10950	-0.003956	-0.380326	0.003001	0.000577	-0.000185
2.011730	0.017676	-0.398949	0.127351	-0.000495	0.000110
-20.88607	0.004258	-0.001249	-0.292818	0.000216	-3.17E-05
22.32467	0.054206	-0.078792	0.403637	-0.001971	0.000385
-6.923518	-0.008700	0.086402	0.496098	-0.000426	0.000106
3.698223	-0.035084	0.466502	0.163654	-0.001486	0.000425

Unrestricted Adjustment Coefficients (alpha):

D(BSD)	0.022554	0.026702	0.024246	0.006803	-0.004042	0.000527
D(EXRT)	-9.044812	7.654198	5.636262	-3.891322	4.905829	-0.392376
D(INFL)	1.499765	2.975407	-1.097057	0.828582	0.001527	-0.024565
D(INTR)	-0.198291	0.408843	0.013948	-0.873986	-0.780527	0.003712
D(M2)	-924.3334	278.6352	951.1355	80.88032	-381.7018	-25.16727
D(RGDP)	-1398.808	784.0792	-1260.147	236.2424	-371.8644	86.87063

1 Cointegrating Equation(s): Log likelihood -532.6733

Normalized cointegrating coefficients (standard error in parentheses)

BSD	EXRT	INFL	INTR	M2	RGDP
1.000000	0.000262	0.025171	-0.000199	-3.82E-05	1.23E-05
	(0.00022)	(0.00268)	(0.00238)	(7.3E-06)	(1.8E-06)

Adjustment coefficients (standard error in parentheses)

D(BSD)	-0.340774
	(0.18739)
D(EXRT)	136.6625
	(77.9191)
D(INFL)	-22.66069
	(15.0154)
D(INTR)	2.996072
	(7.95274)
D(M2)	13966.21
	(6553.05)
D(RGDP)	21135.28
	(13282.5)

2 Cointegrating Equation(s): Log likelihood -506.1485

Normalized cointegrating coefficients (standard error in parentheses)

BSD	EXRT	INFL	INTR	M2	RGDP
1.000000	0.000000	0.032035	-0.002149	-3.18E-05	1.10E-05
		(0.00201)	(0.00259)	(8.0E-06)	(2.0E-06)
0.000000	1.000000	-26.21649	7.449452	-0.024377	0.004968
		(2.44059)	(3.14510)	(0.00968)	(0.00241)

Adjustment coefficients (standard error in parentheses)

D(BSD)	-0.287056	0.000383
	(0.15461)	(0.00018)
D(EXRT)	152.0607	0.171073
	(72.1575)	(0.08574)
D(INFL)	-16.67497	0.046660
	(9.08482)	(0.01080)
D(INTR)	3.818554	0.008011
	(7.84813)	(0.00933)
D(M2)	14526.75	8.581519

	(6512.70)	(7.73899)
D(RGDP)	22712.64	19.39251
	(13013.4)	(15.4637)

3 Cointegrating Equation(s): Log likelihood -495.2512

Normalized cointegrating coefficients (standard error in parentheses)

BSD	EXRT	INFL	INTR	M2	RGDP
1.000000	0.000000	0.000000	0.013034 (0.00543)	-1.76E-05 (1.5E-05)	3.72E-06 (3.7E-06)
0.000000	1.000000	0.000000	-4.975608 (5.12006)	-0.035956 (0.01424)	0.010892 (0.00345)
0.000000	0.000000	1.000000	-0.473941 (0.18580)	-0.000442 (0.00052)	0.000226 (0.00013)

Adjustment coefficients (standard error in parentheses)

D(BSD)	-0.793455 (0.20176)	0.000486 (0.00015)	-0.019261 (0.00430)
D(EXRT)	34.34137 (116.040)	0.195072 (0.08350)	0.379300 (2.47363)
D(INFL)	6.238224 (13.4171)	0.041988 (0.00966)	-1.756066 (0.28601)
D(INTR)	3.527226 (13.3126)	0.008070 (0.00958)	-0.087710 (0.28379)
D(M2)	-5338.729 (8879.65)	12.63149 (6.38986)	239.1986 (189.288)
D(RGDP)	49032.15 (20284.7)	14.02676 (14.5970)	220.7699 (432.410)

4 Cointegrating Equation(s): Log likelihood -488.7049

Normalized cointegrating coefficients (standard error in parentheses)

BSD	EXRT	INFL	INTR	M2	RGDP
1.000000	0.000000	0.000000	0.000000	-3.04E-05 (2.0E-05)	1.39E-05 (5.1E-06)
0.000000	1.000000	0.000000	0.000000	-0.031086 (0.00838)	0.006990 (0.00215)
0.000000	0.000000	1.000000	0.000000	2.22E-05 (0.00071)	-0.000146 (0.00018)
0.000000	0.000000	0.000000	1.000000	0.000979 (0.00160)	-0.000784 (0.00041)

Adjustment coefficients (standard error in parentheses)

D(BSD)	-0.641591 (0.25922)	0.000855 (0.00043)	-0.019797 (0.00423)	-0.000886 (0.00391)
D(EXRT)	-52.53111 (149.134)	-0.015861 (0.25020)	0.685907 (2.43075)	-2.273451 (2.24689)
D(INFL)	24.73604 (16.0308)	0.086902 (0.02689)	-1.821352 (0.26129)	1.039107 (0.24152)

D(INTR)	-15.98423 (15.6738)	-0.039305 (0.02630)	-0.018847 (0.25547)	-0.305386 (0.23615)
D(M2)	-3533.103 (11708.1)	17.01568 (19.6424)	232.8259 (190.833)	-213.1527 (176.398)
D(RGDP)	54306.18 (26712.3)	26.83250 (44.8144)	202.1558 (435.389)	560.0061 (402.456)

5 Cointegrating Equation(s): Log likelihood -484.6526

Normalized cointegrating coefficients (standard error in parentheses)

BSD	EXRT	INFL	INTR	M2	RGDP
1.000000	0.000000	0.000000	0.000000	0.000000	-5.57E-07 (5.7E-07)
0.000000	1.000000	0.000000	0.000000	0.000000	-0.007837 (0.00098)
0.000000	0.000000	1.000000	0.000000	0.000000	-0.000135 (2.5E-05)
0.000000	0.000000	0.000000	1.000000	0.000000	-0.000317 (3.6E-05)
0.000000	0.000000	0.000000	0.000000	1.000000	-0.476985 (0.02851)

Adjustment coefficients (standard error in parentheses)

D(BSD)	-0.613603 (0.26180)	0.000890 (0.00044)	-0.020146 (0.00423)	-0.002891 (0.00537)	-6.65E-06 (1.6E-05)
D(EXRT)	-86.49670 (145.141)	-0.058539 (0.24138)	1.109780 (2.34629)	0.160321 (2.97669)	-0.002211 (0.00902)
D(INFL)	24.72547 (16.3567)	0.086889 (0.02720)	-1.821220 (0.26442)	1.039864 (0.33546)	-0.002478 (0.00102)
D(INTR)	-10.58024 (14.2441)	-0.032515 (0.02369)	-0.086286 (0.23026)	-0.692604 (0.29213)	0.001741 (0.00088)
D(M2)	-890.3838 (11404.7)	20.33632 (18.9669)	199.8461 (184.364)	-402.5143 (233.899)	-0.462272 (0.70853)
D(RGDP)	56880.79 (27034.4)	30.06756 (44.9602)	170.0260 (437.027)	375.5248 (554.447)	-1.774204 (1.67955)

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.052496	Prob. F(6,16)	0.4294
Obs*R-squared	6.508834	Prob. Chi-Square(6)	0.3687
Scaled explained SS	9.951400	Prob. Chi-Square(6)	0.1267

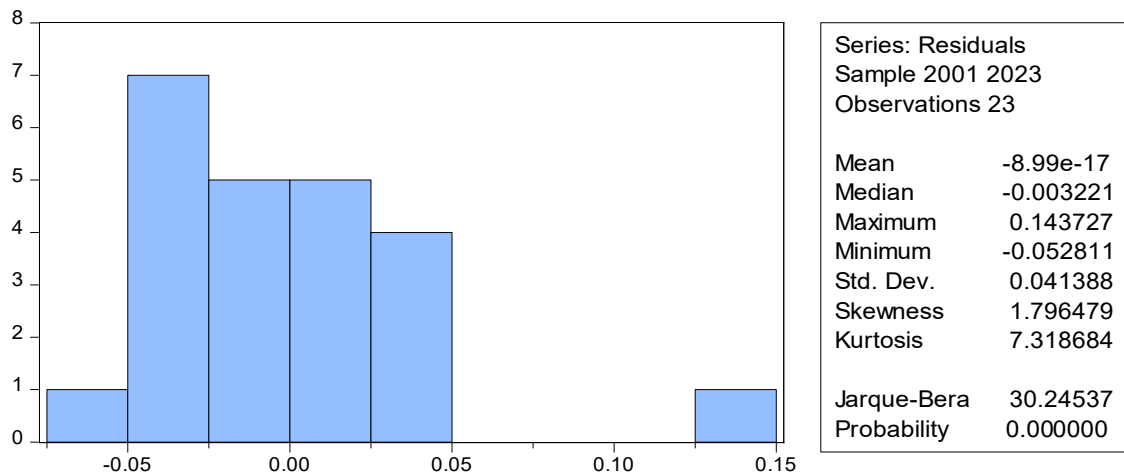
Test Equation:

Dependent Variable: RESID^2

Method: Least Squares
 Date: 10/16/25 Time: 13:30
 Sample: 2001 2023
 Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.019536	0.007964	2.453120	0.0260
EXRT	-5.67E-05	3.64E-05	-1.556022	0.1393
INFL	0.000265	0.000262	1.009585	0.3277
INTR	-0.000482	0.000342	-1.409998	0.1777
M2	6.98E-07	4.98E-07	1.402152	0.1800
RGDP	-6.52E-08	8.71E-08	-0.748314	0.4651
BSD(-1)	-0.017232	0.017819	-0.967078	0.3479

R-squared	0.282993	Mean dependent var	0.001639
Adjusted R-squared	0.014115	S.D. dependent var	0.004211
S.E. of regression	0.004182	Akaike info criterion	-7.870503
Sum squared resid	0.000280	Schwarz criterion	-7.524918
Log likelihood	97.51079	Hannan-Quinn criter.	-7.783589
F-statistic	1.052496	Durbin-Watson stat	1.660610
Prob(F-statistic)	0.429389		



Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.784475	Prob. F(1,15)	0.3898
Obs*R-squared	1.143080	Prob. Chi-Square(1)	0.2850

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 10/16/25 Time: 13:33

Sample: 2001 2023

Included observations: 23

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.085325	0.133941	0.637030	0.5337
EXRT	-0.000248	0.000509	-0.486016	0.6340
INFL	-0.000394	0.003099	-0.127006	0.9006
INTR	0.000647	0.004061	0.159267	0.8756
M2	2.30E-06	6.37E-06	0.360886	0.7232
RGDP	-1.41E-07	1.03E-06	-0.136578	0.8932
BSD(-1)	-0.266244	0.365672	-0.728095	0.4778
RESID(-1)	0.413733	0.467123	0.885706	0.3898

R-squared	0.049699	Mean dependent var	-8.99E-17
Adjusted R-squared	-0.393775	S.D. dependent var	0.041388
S.E. of regression	0.048862	Akaike info criterion	-2.931406
Sum squared resid	0.035813	Schwarz criterion	-2.536452
Log likelihood	41.71117	Hannan-Quinn criter.	-2.832076
F-statistic	0.112068	Durbin-Watson stat	2.133330
Prob(F-statistic)	0.996463		

DATA

YEAR	BSD	EXRT	INFL	INTR	M2	RGDP
2000	0.222129	101.77	6.933292	21.55	878.46	7,062.75
2001	0.272881	111.49	18.87365	21.34	1,269.32	8,234.49
2002	0.240568	120.65	12.87658	30.19	1,505.96	11,501.45
2003	0.224818	129.22	14.03178	22.88	1,952.92	13,556.97
2004	0.207088	133	14.99803	20.82	2,131.82	18,124.06
2005	0.195275	131.1	17.86349	19.49	2,637.91	23,121.88
2006	0.236145	128.14	8.225222	18.70	3,797.91	30,375.18
2007	0.206856	125.07	5.388008	18.36	5,127.40	34,675.94
2008	0.438574	117.78	11.58108	18.70	8,643.43	39,954.21
2009	0.403182	147.27	12.55496	22.62	9,687.51	43,461.46
2010	0.312453	148.31	13.7202	22.51	11,101.46	55,469.35
2011	0.304436	151.83	10.84003	22.42	12,628.32	63,713.36
2012	0.293444	155.45	12.21778	23.79	15,503.41	72,599.63
2013	0.302041	155.25	8.475827	24.69	18,743.07	81,009.96
2014	0.3072	156.48	8.062486	25.74	20,415.61	90,136.98
2015	0.298064	191.8	9.009387	26.71	20,885.52	95,177.74
2016	0.313237	253.09	15.67534	27.29	24,259.00	102,575.42
2017	0.305893	305.29	16.52354	30.60	28,604.47	114,899.25
2018	0.299726	305.58	12.09473	28.16	29,774.43	129,086.91
2019	0.283151	306.42	11.39679	30.57	34,257.90	145,639.14
2020	0.282211	358.31	13.24602	28.64	36,038.01	154,252.32
2021	0.251497	401.98	16.95285	28.06	40,370.41	176,075.50
2022	0.247897	448.22	18.84719	28.11	48,461.42	184,092.20
2023	0.251247	589.52	0	27.98	63,512.40	184,092.20

Source: CBN Statistical Bulletin (2024).