

Effect of Trade Services and Interbank Placement on Financial Sector Development in Nigeria

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ABSTRACT

Despite extensive research on financial sector development, there is a lack of empirical studies specifically examining the combined effects of trade services and interbank placement on financial sector growth in Nigeria. This study examines the effect of trade services and interbank placement on financial sector development in Nigeria using time series data spanned a period of twelve (12) years 2012 to 2023. The study adopted the ex-post-facto research design and secondary data used in the study was sourced from CBN annual statistical bulletin for relevant years. Descriptive statistics, Correlation, Augmented Dickey Fuller Test (ADF), Autoregressive Distributed Lag Model (ARDL) and post estimation test were the main statistical tools used to analysis the data with the help of E-view 12 statistical package. The finding of this study revealed that trade services and interbank placement exerts a positive and significant effect on financial sector development. The study recommended that Nigeria should invest in modernizing trade services infrastructure, adopting advanced technologies like blockchain, and developing digital platforms for faster trade-related documentation and payments. Also, regulators should create a robust framework for interbank placements, ensuring stability and transparency as smaller banks' participation can improve liquidity and trust, leading to a more resilient financial sector.

Keywords: Trade Services, Interbank Placement, Financial Sector Development, Credit to Private sectors and Interest Rate.

INTRODUCTION

The financial sector is the cornerstone of economic growth and development, facilitating the mobilization of savings, the allocation of resources and the provision of investment opportunities. In Nigeria, the financial sector comprises a wide range of institutions, including commercial banks, investment banks, insurance companies and microfinance institutions. The development of the financial sector is necessary to increase the effectiveness and efficiency of these institutions, promote financial inclusion and ensure the stability of the financial system. The development of this sector is related to economic diversification, better access to credit and the facilitation of domestic and international trade. Business services, which include a wide range of financial services such as trade finance, foreign exchange services and payment facilitation, play a vital role in supporting international trade and economic activities. These services enable businesses to engage in cross-border transactions by mitigating risk, providing liquidity and ensuring smooth and secure payments. In Nigeria, business services are essential to support trade relations, promote export and import activities and integrate the country into the global economy. The efficiency of business services is a key factor in a country's ability to compete in the international market and attract foreign investment.

Interbank placement, which involves the lending and borrowing of funds between banks, is another critical aspect of the financial sector. This practice ensures liquidity management within the banking system and allows banks to meet short-term funding needs and manage excess reserves. Interbank placement is key to maintaining the stability of the financial system as it helps banks manage the risks associated with liquidity shortages and excesses. In Nigeria, interbank deposits are an essential mechanism for promoting trust and

cooperation among financial institutions, ensuring the smooth functioning of the banking sector and supporting the development of the financial sector. The interplay of business services and interbank placement significantly influences the development of the financial sector. Trading services facilitate economic activities that drive demand for financial products and services, while interbank placements provide the liquidity and stability necessary for these activities to thrive. The integration and efficiency of business services and interbank placements can improve the financial sector's ability to support economic growth, promote innovation and improve financial inclusion in Nigeria. By examining the relationship between these two elements, this study aims to reveal how they jointly contribute to the broader development of the financial sector.

Despite the recognized importance of business services and interbank placements, there are gaps in the understanding of their joint impact on the development of the financial sector in Nigeria. Existing literature often deals with these components separately, which leaves a gap in a comprehensive analysis of their interaction. The aim of this research is to bridge this gap by examining how the synergy between trading services and interbank placement affects the development of the financial sector. Understanding this relationship is essential for policy makers, financial institutions and stakeholders to design effective strategies that will enhance the resilience and growth of the Nigerian financial sector. The motivation for this study stems from the need to provide empirical evidence on the subject that can inform policy decisions and support sustainable economic development (CBN, 2020; IMF, 2021).

- i. How does trade services affect financial sector development in Nigeria?
- ii. To what extent does interbank placement affect financial sector development in Nigeria?

The basic hypothesis underlying this study are stated thus;

H01: Trade services has no significant effect on financial sector development in Nigeria.

H02: Interbank placement has no significant effect on financial sector development in Nigeria.

LITERATURE REVIEW

Conceptual Framework

This study investigates the effect of trade services and interbank placement on financial sector development. This section reviews the extant literature on the subject matter.

Financial Sector Development

Financial sector development includes measures taken to improve and strengthen various elements and operations of the national financial system to promote economic growth, stability and inclusion. This means strengthening financial institutions, markets and regulatory frameworks to facilitate efficient resource allocation, effective risk management and smooth facilitation of economic activities (Abuselidze, 2021). A well-developed financial sector plays a vital role in channeling money into profitable businesses, facilitating transactions and promoting general economic progress. The financial sector of any economy plays a key role in mobilizing surplus funds from households and other savers and channeling them into productive activities in the real sector. The financial sector includes all financial intermediaries operating within the economy (CBN, 2017).

Abuselidze (2021) identifies the essential elements of financial sector development as financial institutions, financial markets, financial infrastructure, regulatory and supervisory framework, financial inclusion, innovation and technology, investor protection and corporate governance, policy coordination and long-term financing and infrastructure. development. Improving the nation's financial sector means strengthening its banks, insurance companies, pension funds and other financial intermediaries. Strong and adequately funded financial institutions are key to pooling savings, providing credit to businesses and individuals, mitigating risk and enhancing financial stability. "Financial sector development" includes the overall and continuous

improvement, expansion and efficiency of the financial sector within a particular economy. These developments include the improvement of many financial institutions, markets and services, along with the incorporation of advanced technologies and regulatory frameworks.

Trade Services

Trade services, also referred to as trade finance services, are basic financial and banking tools designed to facilitate international business transactions between buyers and sellers in different countries (Abdulrahman & Ajayi, 2022). These services help address the risks and complexities associated with cross-border trade and ensure the smooth movement of goods and payments. Core components of trade services include letters of credit, documentary collections, bank guarantees, export and import financing, trade risk mitigation, advisory services, foreign exchange solutions and supply chain financing. According to Emeka and Aham (2013), letters of credit provide a secure payment structure for both importers and exporters, documentary collections enable handling of shipping and payment documents through banks. Bank guarantees ensure the seller's fulfillment of obligations arising from business contracts. Export and import financing options make it easier for businesses involved in cross-border trade to access working capital. Business advisory services offer regulatory, compliance and documentation expertise, while currency exchange services ensure competitive rates and efficient conversion. Finally, supply chain financing, or reverse factoring, allows suppliers to obtain financing based on the creditworthiness of the buyer.

Interbank Placement

Interbank placement refers to the practice of financial institutions such as commercial banks, policy banks, credit unions, finance companies, trust companies, and securities companies lending excess funds to other banks for a short period of time. This practice allows banks to earn interest on excess liquidity while meeting regulatory requirements. In Nigeria, interbank placement plays a key role in liquidity management, enabling financial institutions to optimize their funds and promoting cooperation within the banking system. The Central Bank of Nigeria (CBN) regulates and monitors the interbank market and creates guidelines to ensure market integrity and financial stability (Eze & Adigwe, 2023).

By participating in interbank placements, banks can improve liquidity management, generate returns on excess funds and comply with regulatory standards. In addition, this practice supports the broader stability of the banking system by providing liquidity to banks with temporary shortages. However, interbank placement is not without risk, as it exposes the institution to the risk of counterparty default and market fluctuations. In response to these risks, recent reforms in Nigeria's interbank market have focused on increasing transparency, efficiency and liquidity. These reforms improved pricing mechanisms and increased market participation, thereby enhancing confidence in the interbank market (Ogunleye & Adeyemi, 2023).

Interbank placements remain an essential tool for liquidity management and financial stability in Nigeria's banking sector, offering both opportunities and challenges in a dynamic financial environment.

Credit to Private Sector

The term "credit to the private sector" refers to the total amount of loans and financial assistance provided by financial institutions, such as banks and other lending entities, to private individuals, businesses, and non-governmental organizations within a particular economy (Nguyen & Nguyen, 2021). This indicator is a key measure of the extent to which financial institutions provide funds to support private sector activities. This private sector includes all non-governmental entities involved in economic activities. This includes a wide range of entities, from small businesses and startups to large corporations and non-profit organizations.

Credit to the private sector includes various types of loans and credit lines provided by financial institutions. This can include term loans, working capital loans, overdrafts, trade finance and other forms of credit tailored to the different needs of private sector entities (Mohammed & Omale 2020). Credit to the private sector is essentially a basic concept in the field of finance and economics. It reflects the relationship between financial institutions and private entities that manage economic activities and serves as a critical indicator for evaluating

the economic health, development and functioning of the financial system.

Interest Rate

According to Olaniyi (2017), the interest rate is the percentage applied to the principal loaned or obtained over a period of time. It indicates the cost of raising cash or the profit that lenders earn from investments. Interest rates are commonly quoted annually as the annual percentage rate (APR). They have a major impact on the economy, shaping consumer spending, business investment, inflation and overall economic growth. Central banks such as the Central Bank of Nigeria (CBN) set benchmark interest rates that act as reference points for various lending and borrowing operations in the financial system, these rates are essential tools for conducting monetary policy as they help in managing inflation and maintaining stability currency.

Interest rates play a vital role in the development of the Nigerian financial system. The Monetary Policy Rate (MPR) set by the Central Bank of Nigeria (CBN) serves as a key indicator to control the liquidity and credit conditions of the economy. Changes in the monetary policy rate (MPR) have a direct impact on various interest rates, including those relating to interbank loans, commercial loans and mortgages. Increased interest rates usually lead to increased borrowing costs, thereby reducing consumer spending and corporate spending, potentially hindering economic expansion (Enuameh, 2019). Conversely, reduced interest rates can encourage borrowing and investment, thereby boosting economic growth. Setting interest rates requires careful calibration, as rates that are too low can trigger inflation, while rates that are too high can hinder economic development. Maintaining an ideal interest rate in Nigeria is particularly difficult due to factors such as inflationary pressures, exchange rate fluctuations, and the need to attract foreign investment while providing domestic businesses with cheap financing (Vayanos & Vila, 2021).

Empirical Review

Trade Services and Financial Sector Development

Ukangwa and Ikechi (2022) examined the effect of Nigeria's exchange rate on Nigeria's economic growth from 1987 to 2018. This study used ordinary least squares technique to construct a regression model to test the stated hypotheses. The study revealed that the Naira rate has no significant impact on economic growth in Nigeria and that the Naira rate has a significant effect on the Naira inflation rate. The study used appropriate statistical analysis tools to examine the data. However, the study was conducted in 2022 and the data covered up to 2018, which is considered late and needs updating to reflect current economic trends in Nigeria.

Godwin and Sergius (2021) examined the effect of exchange rate on the economic growth of Nigeria. Secondary data from the Central Bank of Nigeria Statistical Bulletin was collected over a period of ten years, 2009 to 2018. An ex-post facto research design was used. While some diagnostic tests were performed to confirm the integrity of the data and their interrelationship in the short and long term, the ordinary least squares technique was used in the hypothesis analysis. The study found that the exchange rate had a significant effect on GDP and GNP, but was insignificant on unemployment. The study used appropriate statistical analysis tools to examine the data. However, the study was conducted in 2021 and the data only covered 2018 which is considered late and needs to be updated to reflect current economic trends in Nigeria.

Mohammed and Omale (2020) examined the relationship between the exchange rate and economic growth in Nigeria over the period 1996-2017 using the Autoregressive Distributed Lag (ARDL) model. The ARDL results showed that the depreciation of the naira exchange rate increased the economic growth in Nigeria during the study period, which is significant at the 5% level. The results of the long-run cointegration equation showed that there is a long-run relationship between economic growth and the depreciation of the naira exchange rate, which is significant at the 5% level. The study recommends that a free-floating depreciation policy be complemented by an expansionary monetary policy that causes the interest rate to fall; and consequently a lower cost of capital, which in turn will encourage investment and thus economic growth. The study used appropriate statistical analysis tools to examine the data. However, the study was conducted in 2020 and the data was up to 2017, which is considered late and needs to be updated to reflect current economic trends in Nigeria.

Adebisi and Uket (2020) examine the impact of aggregate bank credit, aggregate bank deposits and interest rate spreads on the growth of the Nigerian economy. The study covered the period 1984-2017 and the dependent variable was approximated by GDPGR = Gross Domestic Product Growth Rate while the independent variable was approximated by ABDP = Aggregate Bank Credit ABDP = Aggregate Bank Deposit IRS = Interest Spread. data were analyzed using various econometric techniques such as descriptive statistics test, augmented Dickey-Fuller (ADF) unit root test, correlation matrix and autoregressive distribution model (ARDL). From the data analysis, they found that there is an insignificant short-run and long-run effect of aggregate bank credit on the growth of the Nigerian economy. It also revealed insignificant short-run and long-run effects of aggregate bank deposits on the growth of the Nigerian economy and other insignificant short-run and long-run effects of interest rate spreads on the growth of the Nigerian economy. They recommended that depository money banks should intensify their deposit mobilization efforts to increase the availability of loanable funds for further lending as this will boost business productivity and increase economic growth in Nigeria and last but not least, interest rates should be kept low. possible improve and motivate investors to collect loans and depositors to increase their deposits for business expansion and growth in Nigeria.

Interbank Placement and Financial Sector Development

Adegbite and Owolabi (2017) examined the effects of interbank placements and foreign trade on economic growth in Nigeria. Secondary data was obtained from the statistical journal of the Central Bank of Nigeria for the period 1970 to 2015. Multiple regressions were used to analyze data on these variables gross domestic product (GDP), exchange rate, imports, exports, trade openness and inflation rate. all had a significant effect on economic growth with an adjusted R² of 0.9468% (approximately 95%). Based on the findings, it was concluded that foreign trade (approximated by imports and exports) has a positive significant effect on economic growth in Nigeria. But the exchange rate has a positive significant effect on exports but has a negative significant effect on imports. The study recommended that the government pull things together by enabling a business environment to stimulate foreign trade. A study by Adegbite and Owolabi (2017) was conducted from 1970 to 2015, this study will bridge the literature gap to consider the current information on the topic.

Obi et al., (2016) investigated the relationship between interbank placement and output growth in Nigeria at different periods from 1970 to 2014. The study used Generalized Method of Moments (GMM) to estimate the economic growth equation due to the endogeneity problem. The findings suggest that fixed exchange rates constrain the performance of the Nigerian economy as the real exchange rate exhibits an inverse relationship with economic growth throughout the period and the period of the fixed exchange rate regime. This study is considered out of date and a more thorough and detailed look at this topic needs to be provided.

Amassoma and Odeniyi (2016) focused their study on the relationship between interbank placements and economic growth in Nigeria using 43 (43) years of annual data covering the period (1970-2013). The study used multiple regression model, Augmented Dickey Fuller (ADF) test, Johansen cointegration test and error correction model (ECM) test. The study shows that exchange rate fluctuations have a positive but insignificant impact on Nigeria's economic growth in both the long and short run. The study recommends that there is a need to encourage domestic production of goods and services for the appreciation of the Naira exchange rate. A study by Amassoma and Odeniyi (2016) focuses on economic growth, this study will assess the interplay between interbank positioning and financial services development in Nigeria.

Theoretical Framework

This study is underpinned by financial intermediation theory.

Financial Intermediation Theory

The theory of financial intermediation was proposed by Franklin Allen and Douglas Gale in their influential study (1988) entitled "A Comparison of the Welfare of Intermediaries and Financial Markets in Germany and the USA". published in the Journal of Money, Credit and Banking in 1988. Financial Intermediation Theory states that financial intermediaries play a role in minimizing costs and information asymmetries that can

prevent direct transactions between individuals who save money and those who borrow money. Intermediaries such as banks improve the efficiency of financial markets and facilitate economic operations by pooling resources, regulating risk and offering liquidity. Financial intermediaries are essential in the business services sector as they provide vital products such as trade finance, letters of credit and foreign exchange services. These products are essential to facilitate both international and domestic trade. These services mitigate the potential risks and expenses associated with international transactions and enable businesses to engage in trade more efficiently. Interbank placement is a key part of financial intermediation. It means that banks lend and lend cash to each other to effectively manage liquidity and maintain stability in the financial system. This mechanism plays a key role in maintaining trust and fostering cooperation between financial institutions, which is necessary to ensure the efficient functioning of the financial sector.

The study finds the theory of financial intermediation very suitable as a foundational theory because it focuses on the key roles that financial intermediaries play in improving market efficiency, minimizing transaction costs and managing risk. These elements are necessary for both trading services and interbank placement. In Nigeria, the financial sector is characterized by dynamic regulatory frameworks, liquidity challenges and the need for strong trade facilitation mechanisms. Financial intermediation theory offers a focused view of how banks and financial institutions can effectively connect savers and borrowers, exporters and importers, and domestic and international markets. This theory summarizes the basic concept of how financial intermediaries facilitate seamless and safer transactions through business services and maintain system stability through interbank placements, thereby directly contributing to the development of the financial sector. Using this theory, the study can accurately examine the distinct structural and operational dynamics of the Nigerian financial sector and offer insights into how these intermediaries contribute to economic growth and financial inclusion in a developing economy.

METHODOLOGY

This study adopts an ex-post facto research design to estimate the concerned models and examine the statistical significance of variables related to trade services, interbank placement, and financial sector development, using annual time series data from 2012-2023. The data were sourced from the Central Bank of Nigeria's statistical bulletin (2023). The study is grounded in the positivism philosophy, which is considered more objective and anchored in scientific methods to test relationships within the study. To ensure a thorough understanding of the dataset, descriptive statistics were calculated for the variables of interest, including the mean, median, maximum, minimum, standard deviation, skewness, kurtosis, and the Jarque-Bera test values, which were analyzed to assess the normality and distribution characteristics of the data.

Pearson correlation analysis was then conducted to examine the relationships between the dependent variable (FSD) and the independent variables (TS, IBP, and INR). This analysis provided insights into the strength and direction of these relationships and helped identify any potential multicollinearity issues. To further ensure the absence of multicollinearity, Variance Inflation Factors (VIF) were calculated, with all values for the independent variables falling below the critical threshold of 10, indicating no multicollinearity issues within the model. The stationarity of the time series data was assessed using the Augmented Dickey-Fuller (ADF) test, which showed that all variables were stationary at their first or second differences. This justified the subsequent use of the ARDL bound test for co-integration analysis.

The ARDL bound test was conducted to determine whether a long-run relationship exists among the variables. The test confirmed the presence of a long-run relationship, supporting the use of the ARDL model to estimate the short-run and long-run impacts of trade services, interbank placement, and interest rate on financial sector development. The R-squared and adjusted R-squared values indicated strong explanatory power for the model, and the coefficients of the independent variables were analyzed for their statistical significance and impact on the dependent variable.

To validate the robustness of the model, post-estimation tests were conducted. The Jarque-Bera test was used to confirm the normality of residuals, the Breusch-Godfrey LM test was applied to check for autocorrelation, and the Breusch-Pagan test was employed to assess heteroskedasticity. These tests further ensured the reliability of the model's results, confirming that the assumptions underlying the econometric analysis were

adequately met. To examine whether trade services and interbank placement are detrimental to financial sector development, the study modifies and adapts the model developed by Adegbite and Owolabi (2017). The model is specified as follows:

$$FSD_t = \beta_0 + \beta_1 TS_t + \beta_2 IBP_t + \beta_3 INR_t + \mu_t \dots \dots \dots (i)$$

Where;

FSD = an indicator using credit to private sector (dependent Variable);

β_0 = Intercept term (a constant);

β_1 = Coefficient of Trade services;

β_2 = Coefficient of interbank placement;

β_3 = Coefficient of interest rate;

TS = a predictor variable (trade service);

IBP = a predictor variable (interbank placement);

INR = a control variable (Interest rate);

μ = Stochastic error term;

t = periods; and

f = Functional relationship.

A Priori Expectation

In the given model, it is expected that trade services (TS) and interbank placement (IBP) will have positive effects on financial sector development (FSD), as both mechanisms facilitate increased liquidity, credit availability, and financial intermediation in the economy. Specifically, the coefficient of trade services (β_1) is expected to be positive, as efficient trade services boost economic activity and stimulate demand for credit in the private sector. Similarly, the coefficient of interbank placement (β_2) is anticipated to be positive, since interbank placements help optimize liquidity and contribute to the stability and functioning of the financial system, which can increase credit to the private sector. The coefficient of interest rate (β_3), however, is expected to have a negative relationship with FSD, as higher interest rates tend to discourage borrowing and reduce the overall demand for credit in the private sector. Therefore, $\beta_1 > 0$, $\beta_2 > 0$, and $\beta_3 < 0$.

Table 1: Variables Measurement

Variables	Type	Measurement	Previous Application
Financial Sector Development	Dependent Variable	It is measured using credit to private sector in Nigeria as stipulated in the CBN financial sector statistical bulletin.	Abimbola (2020) and Sellami et al. (2020)
Trade Services (TS).	Independent Variable	This is the rate in which naira is exchange for dollar in Nigeria.	Godwin and Sergius (2021), Mohammed and Omale (2020) & Ukangwa and Ikechi (2022).
Interbank placement (IBP)	Independent Variable	This is the total savings with the deposit money banks in Nigeria.	Amery (2022), Matthew and Manu (2020), Sellami et a.

			(2020) and Yaya (2019).
Interest rate (INR)	Control Variable	The average rate charged by deposit money banks to borrowers, providing a broad measure of the cost of borrowing in the economy.	Egbetunde and Fadeyibi (2015), Manamba and John (2016) and Sule et al. (2023).

Source: Researcher's Variables measurement, (2024).

RESULT AND DISCUSSION

Descriptive Statistics

In order to obtain a preliminary understanding of the dataset used in the study, an initial analysis was performed using descriptive statistics. This initial review enables us to identify patterns within the data, providing a fundamental grasp of the qualities that will be further investigated in the ensuing investigation. The summary data are displayed in Table 2.

Table 2: Descriptive Analysis Result

	FSD	TS	IBP	INR
Mean	17945.23	320.3125	296.4914	16.23083
Median	16347.00	306.0000	264.6484	16.68500
Maximum	31353.62	638.7000	698.5300	24.75000
Minimum	10440.96	157.5000	124.4821	7.200000
Std. Dev.	6387.166	139.5403	178.8231	3.898462
Skewness	0.930407	0.755538	1.014202	-0.221312
Kurtosis	2.859819	3.251829	3.125131	5.144779
Jarque-Bera	1.741138	1.173384	2.065042	2.397997
Probability	0.418713	0.556164	0.356108	0.301496
Sum	215342.8	3843.750	3557.897	194.7700
Sum Sq. Dev.	4.490408	214186.4	351754.5	167.1781
Observations	12	12	12	12

Source: E-View version 12 Output (2024)

The descriptive statistics for Financial Sector Development (FSD), Trade Services (TS), Interbank Placement (IBP), and Interest Rate (INR) based on 12 observations provide insight into the data's central tendency and variability. FSD, measured as credit to the private sector, has a mean of 17,945.23 units, while TS and IBP have means of 320.3125 and 296.4914 units, respectively. INR reflects the cost of borrowing with a mean of 16.23083%. The median values for FSD, TS, and INR closely align with their respective means, though FSD's median of 16,347 units is lower than its mean, suggesting the presence of higher outliers. IBP's median is lower than its mean, indicating some variation. The ranges of the variables reveal considerable fluctuation,

with FSD ranging from 10,440.96 to 31,353.62 units, TS from 157.5 to 638.7 units, IBP from 124.4821 to 698.53 units, and INR from 7.2% to 24.75%.

Skewness and kurtosis values help assess the normality of the variables. FSD (skewness: 0.93, kurtosis: 2.86) and TS (skewness: 0.76, kurtosis: 3.25) exhibit slight right skewness with nearly normal kurtosis. IBP shows greater right skew (1.01) and near-normal kurtosis (3.13), while INR has a slight left skew (-0.22) and a leptokurtic distribution (kurtosis: 5.14). The Jarque-Bera test probabilities for all variables exceed 0.05, suggesting no significant deviation from normality at the 5% significance level, allowing for the use of parametric statistical methods in further analysis.

Correlation Analysis

Table 3 presents correlation values between dependent and independent variables and the correlation among the independent variables themselves. According to Gujarati (2004), a correlation coefficient between two independent variables of 0.80 is considered excessive, and thus certain measures are required to correct that anomaly in the data.

Table 3: Correlation Analysis Result

Covariance Analysis: Ordinary				
Date: 07/09/24 Time: 12:42				
Sample: 2012 2023				
Included observations: 12				
Correlation				
Probability	FSD	TS	IBP	INR
FSD	1.000000			

TS	0.647048	1.000000		
	0.0000	-----		
IBP	0.535001	0.698867	1.000000	
	0.0007	0.0114	-----	
INR	0.454205	0.405113	0.669005	1.000000
	0.1380	0.1914	0.0174	-----

Source: E-View version 12 Output (2024)

The correlation coefficients between Financial Sector Development (FSD), Trade Services (TS), and Interbank Placement (IBP) reveal significant relationships. The correlation between FSD and TS is 0.647048, significant at the 5% level, indicating that increased trade services are positively associated with financial sector development. Similarly, the positive correlation between FSD and IBP (0.535001) is statistically significant, highlighting the role of interbank placements in fostering financial sector growth. The correlation between TS and IBP is even stronger at 0.698867, indicating a significant link between higher trade services and increased interbank placements, likely due to improved liquidity management in trade finance.

In contrast, the correlations involving Interest Rate (INR) are weaker and less significant. While INR has a moderate positive correlation with IBP (0.669005, significant at the 5% level), its correlation with FSD (0.454205) and TS (0.405113) is weaker and not statistically significant. This suggests that while higher interest rates may encourage interbank placements, their direct influence on financial sector development and trade services is more nuanced. These findings emphasize the strong interconnection between trade services, interbank placements, and financial sector growth, with interest rates playing a more complex role.

Multicollinearity Test (VIF)

To ensure the robustness of the measurements, multicollinearity tests were conducted using the Variance Inflation Factor (VIF) as the evaluation criterion.

***Decision rule:** uncentered VIF less than 10 indicates the absence of multi-collinearity, while VIF intermediate over 10 is a sign of multi-collinearity.

Table 4: Multicollinearity Test (VIF)

Variance Inflation Factors			
Date: 07/09/24 Time: 12:51			
Sample: 2012 2023			
Included observations: 12			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	5.730912	13.55408	NA
TS	2.284509	3.291965	1.420227
IBP	3.402310	9.814978	1.111985
INR	3691.758	9.846502	1.771344

Source: E-View 12 Output (2024)

As noted above, the law of multicollinearity test rule uses a variance inflation factor that VIF centered below indicates a lack of multi-collinearity, while VIF intermediate over 10 indicates the presence of multi-collinearity. Table 4 above shows the absence of multicollinearity between independent variables, as all independent variables (TS, IBP and INR) have less than 10 VIF centres.

Unit Root Test

The unit root test adopted here is the Augmented Dickey Fuller Test and the results are shown in Table 5 below;

Table 5: Summary of ADF unit Root Test for the series of FSD, TS, IBP and INR

VARIABLES	Lags	T-statistic	5%	P-Value	Integrated	Remarks
			Critical Value		Order	
FSD	0	1.925225	-3.175352	0.5991	I (0)	Not Stationary

	1	-4.392265	-3.259808	0.0304*	I (1)	Stationary
TS	0	-2.401404	-3.259808	0.1663	I (0)	Not Stationary
	1	-4.288750	-3.403313	0.0175	I (1)	Stationary
IBP	0	0.175438	-3.175352	0.9562	I (0)	Not Stationary
	1	-1.979860	-3.212696	0.2892	I (1)	Not Stationary
	2	-4.738625	-3.259808	0.0066	I (2)	Stationary
INR	0	-1.752966	-3.175352	0.3811	I (0)	Not Stationary
	1	-4.814046	2.259808	0.0440*	I (1)	Stationary

Source: Researchers Computation (E-view 12) 2024

It is evidenced from Table 5, that all the variables FSD, TS, IBP and INR were found to be stationary at first difference and second difference respectively; that is integrated at order 1 and 2, and at 5% level of significance. Since all the variables were found to be stationary at first and second different orders, it was logical for the study to conduct ARDL bound test approach to validate the dataset.

ARDL Bound Test for Co-integration Analysis

The Autoregressive Distributed Lag (ARDL) bound test for co-integration analysis assesses whether there is a long-run relationship between variables by determining if the coefficients in the model are jointly statistically significant.

Table 6: ARDL Bound Test for Co-integration Analysis

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.976985	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	11		Finite Sample: n=35	
		10%	2.618	3.532
		5%	3.164	4.194
		1%	4.428	5.816

Source: E-View 12 Output (2024)

The result of the ARDL bounds testing approach for the inflation model in table 6 above indicating that the F-statistic value of 4.976985 calculated at K = 3 (number of independent variables) falls above the upper bound critical value I(0) at 5% significance level. Therefore, the study concludes that there is a long-run relationship among the model variables and thereby reject the hypothesis of no co-integration at 5% significance level. This

indicates a long-run relationship between the variable for the period.

Test of Research Hypotheses

Table 7: ARDL Regression Result

Dependent Variable: FSD				
Method: ARDL				
Date: 07/10/24 Time: 09:14				
Sample (adjusted): 2013 2023				
Included observations: 11 after adjustments				
Maximum dependent lags: 1 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (0 lag, automatic): TS IBP INR				
Fixed regressors: C				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	2921.980	4030.037	0.725051	0.4957
FSD(-1)	0.476482	0.474366	1.004461	0.3539
TS	17.92710	14.99327	1.195676	0.0769
IBP	10.96528	6.444649	1.701454	0.0398
INR	-104.7287	195.3116	-0.536213	0.6111
R-squared	0.962886	Mean dependent var		18627.44
Adjusted R-squared	0.938143	S.D. dependent var		6223.513
S.E. of regression	1547.849	Akaike info criterion		17.83007
Sum squared resid	14375012	Schwarz criterion		18.01094
Log likelihood	-93.06541	Hannan-Quinn criter.		17.71607
F-statistic	38.91608	Durbin-Watson stat		1.746914
Prob(F-statistic)	0.000199			

Source: E-View 12 Output (2024)

The ARDL model results provide key insights into the factors influencing Financial Sector Development (FSD) in Nigeria, with variables such as Trade Services (TS), Interbank Placement (IBP), and Interest Rate (INR) playing important roles. The constant term and lagged FSD value (FSD(-1)) are not statistically significant, indicating that past values of FSD do not strongly predict current levels. However, the model exhibits strong explanatory power with an R-squared of 0.962886 and an adjusted R-squared of 0.938143, suggesting that over 96% of the variation in FSD is explained by the included variables. The coefficient for TS is positive (17.92710) and marginally significant at the 10% level, suggesting that improved trade services

positively contribute to financial sector development. Meanwhile, IBP shows a significant positive impact with a coefficient of 10.96528 (p-value = 0.0398), underscoring the role of interbank activities in fostering financial sector growth. Conversely, INR has a negative but statistically insignificant coefficient, indicating that interest rates do not have a direct impact on FSD within this model.

The overall fit of the model is strong, as reflected by the F-statistic of 38.91608 and its associated p-value of 0.000199, confirming that the model is statistically significant and that the regressors collectively explain the variation in FSD. The Durbin-Watson statistic of 1.746914 suggests no significant autocorrelation in the residuals, and the low standard error of regression (1547.849) relative to the mean dependent variable (18627.44) further indicates the model's predictive accuracy. In summary, the ARDL results highlight the significant roles of trade services and interbank placements in driving financial sector development in Nigeria, while interest rates seem to have a more complex and indirect influence. These findings suggest a policy focus on enhancing trade services and interbank operations to support financial sector growth.

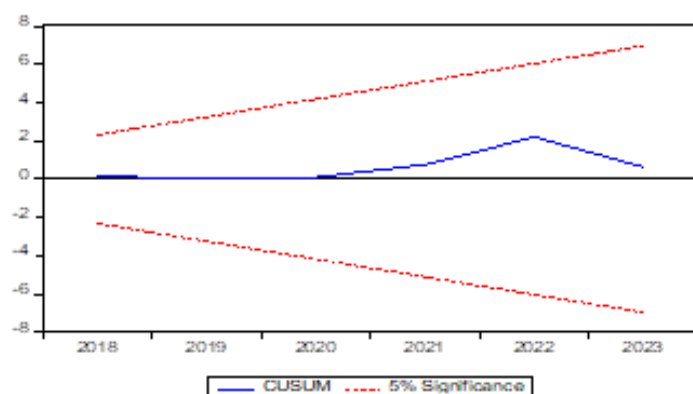
Table 8: Post-Estimation Test

Descriptions	Probability Values
Normality's Test;	
Jarque-Bera	1.528648
P-value	0.465649
LM Serial Correlation;	
F-statistics	0.1303
P-value	0.1298
Heteroskedasticity Test;	
F-statistics	1.503698
P-value	0.3116

Source; Researcher Computation from E-view version 12 Output (2024)

Table 8 above reveals that the data is skewed, denoting that the data are normal. This is corroborated by the Jarque-Berra Statistic of 1.528648 and its corresponding P-value of 0.465649 which is greater than the p-value of 0.05. The Breusch-Godfrey Serial Correlation LM Test indicates that there is no autocorrelation. This is given by the F-statistic of 0.1303 and its corresponding P-value of 0.1298. The Breusch Pegan Test of Heteroskedasticity with F-statistics 1.503698 and its corresponding P-value of 0.3116 indicates that there is no problem with heteroskedasticity.

Figure 1: Stability Test



The CUSUM (Cumulative Sum) plot is used to test the stability of the coefficients in a regression model over time. The decision rule for interpreting the CUSUM plot is that if the cumulative sum line (CUSUM) stays within the 5% significance level boundaries (the red dashed lines), the model is considered stable. In this plot, the CUSUM line remains within the upper and lower 5% significance boundaries throughout the sample period (2012-2023). This indicates that there is no significant structural instability in the model, suggesting that the regression coefficients are stable over the period under consideration. Therefore, the model's parameters can be reliably used for inference and forecasting within this timeframe.

CONCLUSION AND RECOMMENDATIONS

The ARDL model results indicate that trade services (TS) and interbank placement (IBP) significantly contribute to financial sector development in Nigeria. The positive and marginally significant coefficient for TS underscores its role in enhancing financial sector performance, aligning with literature that suggests improved trade services facilitate secure transactions, reduce costs, and mitigate risks in trade activities (Ukangwa & Ikechi, 2022). By supporting exporters and importers, trade services increase the efficiency and reliability of the financial sector, promoting its growth. Similarly, the significant positive coefficient for IBP highlights its importance, consistent with the Financial Intermediation Theory, which emphasizes that interbank activities are vital for liquidity management and stability in the financial system (Diamond & Dybvig, 1983). Interbank placements improve fund allocation, support liquidity, and build trust among institutions, crucial for financial sector development, as supported by studies from Amassoma and Odeniyi (2016) and Adegbite and Owolabi (2017).

Conversely, the negative but statistically insignificant coefficient for interest rates (INR) suggests that interest rates do not have a direct and significant impact on financial sector development in this model. While traditional economic theory emphasizes the role of interest rates in influencing financial activities, other factors such as regulatory environments, political stability, and broader economic conditions may play a more prominent role in shaping financial outcomes in Nigeria. This finding aligns with literature suggesting that the effect of interest rates on financial development can be complex and mediated by various factors (Mishkin, 2019). Therefore, while interest rates are important, their direct impact on financial sector development appears less pronounced compared to trade services and interbank placements in the Nigerian context.

Based on the data analysis and findings of this study, the following recommendations were suggested.

- i. Given the positive impact of trade services on financial sector development, the Nigerian government and financial institutions should invest in modernizing and expanding trade services infrastructure. This includes adopting advanced technologies for trade finance, such as blockchain for secure and transparent transactions, and developing comprehensive digital platforms that facilitate faster processing of trade-related documentation and payments. By streamlining and automating trade services, Nigeria can further reduce transaction costs and risks, thereby fostering greater financial sector development.
- ii. To capitalize on the significant role of interbank placements in financial sector growth, regulators should focus on creating a robust framework that ensures the stability and transparency of interbank markets. This could involve implementing stricter reporting requirements and enhancing oversight to prevent systemic risks. Additionally, fostering a more competitive interbank market by encouraging the participation of smaller banks can improve liquidity and trust among financial institutions, leading to a more resilient financial sector.

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