Least Squares Method of Analysis of Financial Deepening on all Share Index in Nigeria

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ABSTRACT

Generally, financial deepening has been energetic in development, economic growth and constancy. Financial deepening encircles the extension in monetary resources. This study examined the Least Squares Method of Analysis of Financial Deepening on All Share Index in Nigeria, by detecting the liberated impacts of all share index, credit to private sector, money supply, access to financial services and financial inclusion to the growth of the economy, using annual series data between 1986 and 2025. The study uses least squares method of analyses, the results shows that credit to private sector, money supply, access to financial service and financial inclusion have a significant impact on Nigeria's all share index. The coefficient of credit to private sector, money supply and access to financial service are positive (0.099500, 0.003374 and 3.792736) implying that a unit rise in credit to private sector, money supply and access to financial service would result in a 0.0995, 0.0034 and 3.7927 unit increases in the overall performance of stock market in Nigeria with probability value of 0.0000, 0.9668 and 0.0057 implying that CPS and AFS are statistically significant at 1% but M2 is not statistically significant between the period under review. Whereas the coefficient of financial inclusion is negative (3.238600) implying that a unit increase in financial inclusion would result in a 3.238 unit decreases in all share index which measured the overall performance of stock market in Nigeria with probability value of 0.0173 implying that financial inclusion is statistically significant between the period under review. Additionally, the R-squared provides the predictive power of a model, which is calculated to be 0.942082. The study recommended that Nigeria Stock Exchange should educated the masses on financial markets operation especially about shares of companies and how it operates and to ensure the markets is monitor by the right agencies in order to avoid misconducts and boost private sector participation. Similarly the development of the money and capital markets should be ordered by the administrators of macroeconomic in the country to enlarge the level of economic growth in the country. Finally, the study also recommended that central bank should encourage financial liberalization in the economy and to helps in regulating credit controls and allowing market to dogged real interest rates and legislate a policy that allow financial penetration across the nation.

KEYWORDS

Least Squares Method, Financial Deepening Indicators, All Share Index, Nigeria

I. INTRODUCTION

Financial deepening denotes to the extension and increased complexity of financial systems, including the development of financial markets, institutions, and products that improve access to capital and supplement the effectiveness of resource allocation. Internationally,

financial deepening has been vital in fostering economic growth and stability. Also, the World Bank (2022) observes that financial deepening envelops the expansion in monetary resources.

According to King and Levine (1993), well-built financial systems play a key role, in promoting investment and economic development, by sinking the costs of capital and attractive risk management. Countries with progressive financial markets, such as the United States, Japan, and Germany, have shown how financial deepening can support high levels of economic growth and technological innovation (Levine, 2005). However, the effort of Schumpeter (1911) and other researchers such as McKinnon (1973) and Shaw (1973) have recognized that the development of the financial sector has productivity and growth improving effects. Accordingly, the financial deepening indicators and credit to private sector has conventional considerable attention in both developed and developing economies. This concern about financial deepening and credit to private sector finds its justification in the policy implications that the relationship can bring about, as improved living standards for their citizens as well as increased economic growth rates are the goals required by many governments.

Financial deepening has been one of the policy implications in Nigeria since the introduction of the Structural Adjustment Programme (SAP) in 1986 that required the liberalization of financial sector and enhance the efficacy of monetary management. Additional reforms followed to enhance financial institutions, increase the credit supply, developed capital markets and financial inclusion. All these reforms were aimed at boosting internal production, sustaining prices, minimizing unemployment, inflation, and alleviating balance of payment stress. In contradiction of this goal, Central Bank of Nigeria (CBN) has implemented capital requirements on banks in order to enhance their ability to fund real sector investment and economic growth.

Meanwhile, financial deepening is still hindered by structural challenges that exist in the Nigerian financial system. These are high inflation rate, exchange rates volatility and over-reliance on oil revenues which expose the economy to external shocks. Despite the banking industry becoming more resilient, the bank loan to the private sector is not high, and the supply of finance to small and medium-sized businesses is still inaccessible. Furthermore, the capital market is still light, and financial inclusion which is increasing with the help of mobile banking and microfinance projects is not at its optimal stage.

Since the early 2000s, financial deepening in Nigeria has been more directed towards expansion of financial inclusion, digital financial services and diversification of the economy beyond depending on oil. There exist, some concerns on how far these developments have been translated into effective monetary expansion and performance of the financial sector. The overall effect of financial deepening on the credit to private sector remains inadequate due to limited access to banking services, poor capital markets, poor credit transmission systems, and financial instability.

In the background of Nigeria, financial deepening has been a leading policy objective since the country’s economic restructurings in 1986, following the implementation of the Structural Adjustment Program (SAP). Regardless of several measures aimed at sanitizing the deepness of the financial sector, Nigeria's financial sector has faced trials, including limited access to banking services, insufficient financial inclusion, underdeveloped capital markets, and issues of financial stability. These trials have impacted the effectiveness of

financial deepening in promoting broader macroeconomic concert, which includes growth in GDP, inflation control, employment generation, and poverty reduction.

A. Statement of the Problem

Over decades, Nigeria has knowledgeable financial sector reforms to deepening its financial system, such as the development of its capital markets, overall performance of stock market, credit growth, access to financial services and financial inclusion, the empirical confirmation of such efforts on all share index is not pure and is doubtful. There are also structural issues, including high inflation rate, volatility of exchange rates, and narrow capital markets, and the existing empirical data are inconsistent: some researchers find a positive relationship between credit to the private sector and market capitalization and growth, but others report in accumulation, the majority of the previous studies consider the economic growth or alleviation of poverty instead of directly addressing all share index, and all-out of them employ one or two proxies of financial deepening through conventional estimation techniques (ARDL, VECM, ARCH and GARCH), which are unable to capture the dynamic, multivariate correlation among the variables. The particular gap that the present study addresses is that no prior study has used a Least Squares Method with recent annual data from 1986 to 2025 to simultaneously examine the financial deepening variables on all share index in Nigeria.

B. Aim

The main aim of this study is to examine the least squares method of analysis of financial deepening on all share index in Nigeria in order to evaluate the efficacy of financial sector development in strengthening the overall performance of stock market growth and development.

C. The study is guided by the following objectives below to:

- Examine the impact of credit to private sector on all share index in Nigeria.
- Assess the relationship between money supply and all share index in Nigeria.
- Adjust the influence of access to financial services on all share index in Nigeria.
- Evaluate the impact of financial inclusion on all share index in Nigeria.

D. The study is guided by the following null hypothesis below to:

- $H_{0:}$ Financial deepening have no significant impact on all share index in Nigeria
- $H_{1:}$ Financial deepening have significant impact on all share index in Nigeria

II. LITERATURE REVIEW

This study briefly explains the literature reviews of the existing research, predominantly, least squares method of analysis of financial deepening on all share index in Nigeria, role of digital finance and financial inclusion. There are erratic results on previous research on financial deepening on economic growth, macroeconomics performance, money supply, credit to private sector, and market capitalization such as;

Ozor *et al*. (2023) found money supply was positively and significantly related to economic growth, but credit to the private sector was negatively related, demonstrating ineffectiveness.

Okete & Camillus (2024) suggest that credit to private sector and market capitalization significantly favour economic growth, but money supply and lending rate did not play important roles.

Zakari & Mohammed (2025) highlight that positive impact of financial deepening on growth and low causality between financial development and macroeconomic variables.

Adamgbo *et al*. (2024) Digital financial services play a major role in fostering financial deepening through increasing access and inclusivity.

Musa *et al*. (2024) claimed that one of the vital pathways through which monetary growth can influence the real sector is financial inclusion (bank departments, electronic mediums). Yahaya & El-Rasheed (2024) discovered that financial innovation and literacy work to improve inclusion, the increase in the money supply may reduce inclusion in the long term. Jimoh, Wafure & El-Yaqub (2026), noted that Broad money supply, all share index, and financial inclusion positively affected the long-run but credit to private sector, market capitalization and access to financial services had negative/insignificant impacts. No causal link between deepening indicators and growth.

Jimoh, Wafure & El-Yaqub (2026), their study examined the effect of the financial deepening and economic growth in Nigeria, by perceiving the independent contributions of the credit to private sector, money supply, exchange rate, inflation rate and interest rate to the growth of the economy, using annual series data between 1986 and 2024. By basing their study on the Autoregressive Distributed Lag Model, Bound Test and Error Correction Mechanism methods of analyses, the results indicated that while money supply and interest rate had positive and statistically significant effect on the economic growth in the long-run, credit to private sector, exchange rate and inflation rate declined and the outcomes in terms of economic growth and development were statistically insignificant, implying that the deepening of the financial system in the economy in itself was insignificant as its effect on the economy was found to be majorly negative.

Jimoh, Sani, & Danrimi (2026), they examined relationship between exchange rate and gross domestic product is crucial for understanding of how these variables work in the country to affect the economic activities, thus giving empirical guide for policy formulation. This study empirically models the quarterly gross domestic product and exchange rate from 1986 to 2025 using vector autoregressive model. The VAR residual correlation matrix of the variables indicates that gross domestic product is positively correlated with exchange rate and there is present of co-integration among the variables.

Jimoh & Obaka (2026), they examined vector error correction model of financial deepening on credit to private sector in Nigeria, by observing the independent outcome of credit to private sector, money supply, market capitalization, all share index, access to financial services and financial inclusion to the growth of the economy, using annual series data between 1986 and 2025. The study use Vector Error Correction Model, Counteraction and Granger Causality methods of analyses.

Jimoh (2026), examined least squares method of analysis of financial deepening on market capitalization in Nigeria, by detecting the independent outcome of market capitalization, all

share index, credit to private sector, money supply, access to financial services and financial inclusion to the growth of the economy, using annual series data between 1986 and 2025. The study use ARCH and GARCH models of analyses. The results shows that credit to private sector, money supply, access to financial service and financial inclusion have a significant impact on Nigeria's market capitalization.

Obunike-Ezeuli *et al*. (2024) ratify that strong financial intermediation lowers poverty, but too much monetary growth has adverse distributional implications.

Nwosa (2018) purported that disagreed with the positive results on market capitalization (as a counterpoint result).

A. Methodology

1. Data Description

The study utilizes secondary data obtained from the central Bank of Nigeria (CBN) Statistical Bulletin for the period 1986 to 2025.

The variables in the Study were abbreviated as follows;

- ASI: All Share Index
- CPS: Credit to Private Sector
- MS: Money supply
- AFS: Access Financial Services
- FI: Financial Inclusion

2. Least Squares Method of Analysis

This paper employs the least squares method of analysis of financial deepening on all share index in Nigeria.

The Least Squares Method is a statistical technique used to find the best-fitting line through a set of data points by minimizing the sum of the squares of the errors residuals. It is also a procedure to determine the best fit line to data; the proof uses simple calculus and linear algebra. The basic problem is to find the best fit straight line y = ax + b given that, for n ∈ {1, N}, the pairs (x_n, y_n) are observed. The method easily generalizes to finding the best fit of the form

$$y = c_1 f_1(x) + \cdots + c_K f_K(x); \quad (1)$$

It is not necessary for the functions f_1 to be linearly in x, so all that is needed is that y is to be a linear combination of these functions.

Frequently in the real world one expects to find linear interactions between variables. For instance, the force of a spring linearly depends on the dislocation of the spring: $y = kx$ (here y is the force, x is the dislocation of the spring from rest, and k is the spring constant). To test the projected correlation, scholars go to the lab and measure what the force is for various dislocations. Thus they assemble data of the form (x_n, y_n) for n ∈ {1, N}; here y_n is

the observed force in Newton's when the spring is dislocated x_n meters. For instance, 100 "simulated" observations of dislocation and force (k = 5).

Inappropriately, it is tremendously unlikely that we will observe a perfect linear correlation. There are two reasons for this. The first is experimental error; the second is that the fundamental correlation may not be exactly linear, but somewhat only approximately linear. For a simulated data set of dislocations and forces for a spring with spring constant equal to 5.

The Least Squares Method is a procedure, requiring just some calculus and linear algebra, to determine what the "best fit" line is to the data. Although, we need to quantify what we mean by "best fit", which will require a brief review of some probability and statistics. A careful analysis of the proof will show that the method is capable of great generalizations. Instead of finding the best fit line, we could find the best fit given by any finite linear mixtures of specified functions. Therefore the general problem is given functions $f_1,...,f_k$, find values of coefficients $c_1,...,c_K$ such that the linear mixture

$$y = c_1 f_1(x) + \cdots + c_K f_K(x); \quad (2)$$

Is the best approximation to the data?

We give a rapid overview to the basic elements of probability and statistics which we need for the Least Squares Method. Given a sequence of data x_1, x_N, we define the mean or the expected value to be $(x_1 + \cdots + x_N)/N$.

We indicate this by writing a line above x: thus

$$\bar{x} = \frac{1}{N} \sum_{n=1}^{N} X_n \quad (3)$$

The mean is the average value of the data. Consider the following two sequences of data: {2,4,6,8,10} and {6,6,6,6,6}. Both sets have the same mean; nevertheless, the first data set has greater variation about the mean. This leads to the concept of variance, which is a useful tool to quantify how much a set of data changes about its mean. The variance of {x_1, x_N}, denoted by σ^2 x, is

$$\sigma_x^2 = \frac{1}{N} \sum_{n=1}^{N} (X_i - \bar{x})^2 \quad (4)$$

The standard deviation σ_x is the square root of the variance:

$$\sigma_x = \sqrt{\frac{1}{N} \sum_{n=1}^{N} (X_i - \bar{x})^2} \quad (5)$$

Note that if the *x's* have units of meters then the variance σ_x^2 has units of meters^2, and the standard deviation σ_x and the mean $\bar{x}$ have units of meters. Thus it is the standard deviation that gives a good measure of the deviations of the *xs* around their mean. There are, of course, alternate measures one can use. For example, one could consider

$$\frac{1}{N} \sum_{n=1}^{N} (X_i - \bar{x}) \quad (6)$$

Unfortunately, this is a signed quantity, and large positive deviations can cancel with large negatives. In fact, the definition of the mean directly implies the above is zero! This, then, would be a terrible measure of the variability in data, as it is zero regardless of what the

values of the data are. We can rectify this problem by using absolute values. This leads us to consider

$$\frac{1}{N}\sum_{n=1}^{N} \left| X_i - \bar{x} \right| \quad (7)$$

While this has the benefit of avoiding cancellation of errors as well as having the same components as the *xs*, the absolute value function is not a good function analytically. It is not differentiable. This is primarily why we consider the standard deviation (the square root of the variance), this will allow us to use the tools from calculus.

We can now quantify what we mean by "best fit". If we believe $y = ax + b$, then $y - (ax + b)$ should be zero. Thus given observations

$$\{(x_1, y_1) ,..., (x_n, y_n)\}, \quad (8)$$

We appearance at

$$\{y_1 - (ax_1+b),..., y_n - (ax_n +b)\}. \quad (9)$$

The mean should be small (if it is a good fit), and the variance will measure how good of a fit we have. However, note that the variance for this data set is

$$\sigma^2_{y-(ax+b)} = \frac{1}{N}\sum_{n=1}^{N}(y_n - (ax_n + b))^2 \quad (10)$$

Huge errors are given an advanced weight than smaller errors due to the squaring. Thus our procedure favours many medium sized errors over a few huge errors. If we used absolute values to measure the error (see equation (7)), then all errors are weighted equally; however, the absolute value function is not differentiable, and thus the tools of calculus become inaccessible.

Given data $\{(x_1, y_1), (x_n, y_n)\}$, we may define the error associated to saying $y = ax + b$ by

$$E(a, b) = \sum_{n=1}^{N}(y_n - (ax_n + b))^2 \quad (11)$$

This is just N times the variance of the data set $\{y_1 - (ax_1 + b),..., y_n - (ax_n +b)\}$. It makes no difference whether or not we study the variance or N times the variance as our error, and note that the error is a function of two variables. The goal is to find values of *a* and *b* that minimize the error. In multivariable calculus we learn that this requires us to find the values of (a, b) such that

$$\frac{\partial E}{\partial a} = 0, \frac{\partial E}{\partial b} = 0. \quad (12)$$

However, we do not have to worry about boundary points: as $|a|$ and $|b|$ become big, the fit will clearly get worse and worse. Thus we do not need to check on the boundary. Differentiating E (a, b) yields

$$\frac{\partial E}{\partial a} = \sum_{n=1}^{N} 2(y_n - (ax_n + b)) \cdot(-x_n)$$

$$\frac{\partial E}{\partial b} =\sum_{n=1}^{N} 2(y_n - (ax_n + b)) \cdot 1. \quad (13)$$

Setting $\partial E/\partial a = \partial E/\partial b = 0$ (and dividing by 2) yields

$$\sum_{n=1}^{N} (y_n - (ax_n + b)) \cdot x_n = 0$$

$$\sum_{n=1}^{N} 2(y_n - (ax_n + b)) = 0 \quad (14)$$

We may rewrite these equations as

$$\left(\sum_{n=1}^{N} X_n^2\right)a + \left(\sum_{n=1}^{N} X_n\right)b = \sum_{n=1}^{N} X_n \mathrm{y}_\mathrm{n}$$

$$(\textstyle\sum_{n=1}^{N} X_n)a + (\sum_{n=1}^{N} 1)\,b = \sum_{n=1}^{N} \mathrm{y}_\mathrm{n} = 0 \quad (15)$$

We have obtained that the values of *a* and *b* which minimize the error (defined in (3)) satisfy the following matrix equation:

$$\begin{pmatrix} \sum_{n=1}^{N} X_n^2 & \sum_{n=1}^{N} X_n \\ \sum_{n=1}^{N} X_n & \sum_{n=1}^{N} 1 \end{pmatrix} \begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} \sum_{n=1}^{N} X_n \mathrm{y}_\mathrm{n} \\ \sum_{n=1}^{N} \mathrm{y}_\mathrm{n} \end{pmatrix} \quad (16)$$

We will show the matrix is invertible, which implies

$$\begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} \sum_{n=1}^{N} X_n^2 & \sum_{n=1}^{N} X_n \\ \sum_{n=1}^{N} X_n & \sum_{n=1}^{N} 1 \end{pmatrix}^{-1} \begin{pmatrix} \sum_{n=1}^{N} X_n \mathrm{y}_\mathrm{n} \\ \sum_{n=1}^{N} \mathrm{y}_\mathrm{n} \end{pmatrix}. \quad (17)$$

Denote the matrix by *M*. The determinant of *M* is

$$M = \textstyle\sum_{n=1}^{N} X_n^2 . \sum_{n=1}^{N} 1 - \sum_{n=1}^{N} X_n . \sum_{n=1}^{N} X_n \quad (18)$$

As

$$\bar{x} = \frac{1}{\mathrm{N}} \textstyle\sum_{n=1}^{N} X_n \quad (19)$$

We find that

$$M = N \textstyle\sum_{n=1}^{N} X_n^2 - (N\bar{x})^{-1}$$

$$M = N^2 \left(N\bar{x}\frac{1}{\mathrm{N}} \textstyle\sum_{n=1}^{N} X_n^2 - \bar{x}^2\right)$$

$$M = N^2 . N\bar{x}\frac{1}{\mathrm{N}} \textstyle\sum_{n=1}^{N} X_n - \bar{x}^2 \quad (20)$$

Where the last equality follows from simple algebra. Thus, as long as all the X_n are not equal, determinant *M* will be non-zero and *M* will be invertible.

Thus we find that, as long as the *x's* are not all equal, the best fit values of *a* and *b* are obtained by solving a linear system of equations; the solution is given in (8).

While for any real world problem, direct computation determines whether or not the resulting matrix is invertible, it is nice to be able to prove the determinant is always non-zero for the best fit line if all the *x's* are not equal.

3.1 Data Analysis

The data of this work was analysed using the E-view 10.0 Statistical packages. The justification to used E-view 10.0 is due to the consideration that E-views is very powerful and easier in time series analysis.

B. Empirical results

1. Descriptive Analysis

Table 1: Descriptive Statistics

	LASI	LCPS	LM2	LAFS	LFI
Mean	11.52592	27.54697	14.78448	14.84242	14.68621
Median	12.33007	27.87292	15.02959	15.73601	15.57427
Maximum	13.52122	29.66375	18.63044	17.91862	17.82362
Minimum	7.494319	20.25531	10.21793	8.647572	8.552155
Std. Dev.	1.772848	2.318696	2.512913	2.765547	2.723719
Skewness	-1.035012	-1.987676	-0.299729	-1.141015	-1.146664
Kurtosis	2.827337	6.796523	1.843514	3.023417	3.064162
Jarque-Bera	7.191346	50.36168	2.828019	8.680344	8.772457
Probability	0.027442	0.000000	0.243166	0.013034	0.012448
Sum	461.0369	1101.879	591.3793	593.6968	587.4484
Sum Sq. Dev.	122.5766	209.6778	246.2745	298.2817	289.3271
Observations	40	40	40	40	40

The descriptive analysis indicates that there is a lot of difference in the variables across 1986-2025. Money supply has a strong upward momentum, which reflects continuous monetary growth, and financial services and financial inclusion have been improving with time. Conversely, market capitalization, and credit to the private sector exhibits broad fluctuations indicating instability in banking lending in the capital market. Most of the variables have high standard deviations implying structural volatility in the Nigerian financial system. All the variables are negatively skewed (left-skewed). More so, all share index (ASI) and money supply (LM2) are mesokurtic in nature (kurtosis < 3); the other variables (LM2, LASI, LAFS, and LFI) are platykurtic (kurtosis < 3).

C. Trends Analysis

The trend analysis explores a visual data representation of the financial deepening and all share index.

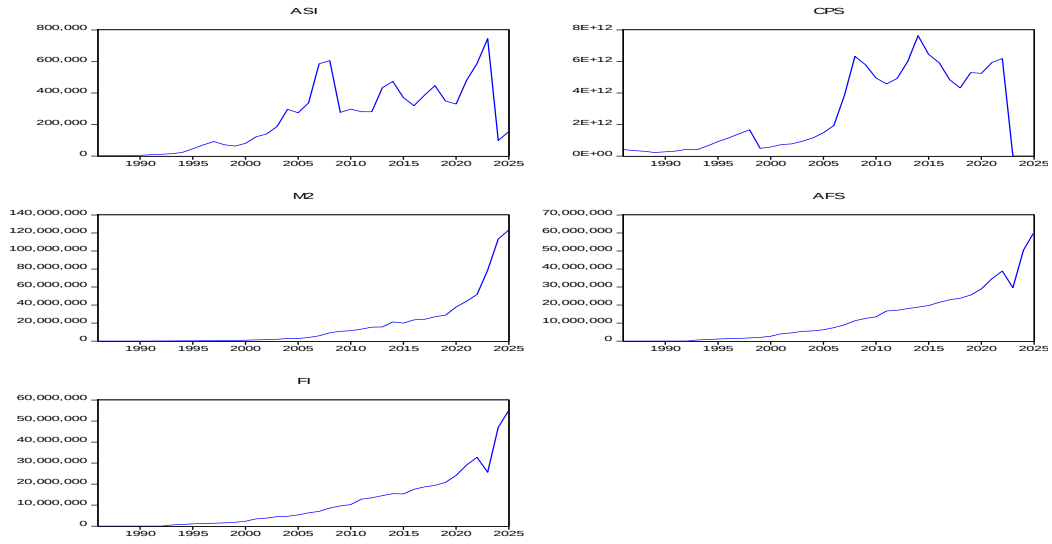


Figure 1: Graph of the Raw Data

The raw data in figure 1 shows that M2 has been slowly increasing and decreasing in 2010 and oscillated over the years. CPS and ASI were relatively constant between 1986 to 1999 then declined to 2000 and gradually increasing to 2010 and skyrocketed in 2015 to 2020 declined, MC also increased gradually over the years; 1986 to 2020 but declined over the years. AFS and FI have been on gradual increment over the years. The plots also showed that all the series exhibit non stationarity behavior. The Augmented Dickey Fuller test was used to formally test for stationarity in the series.

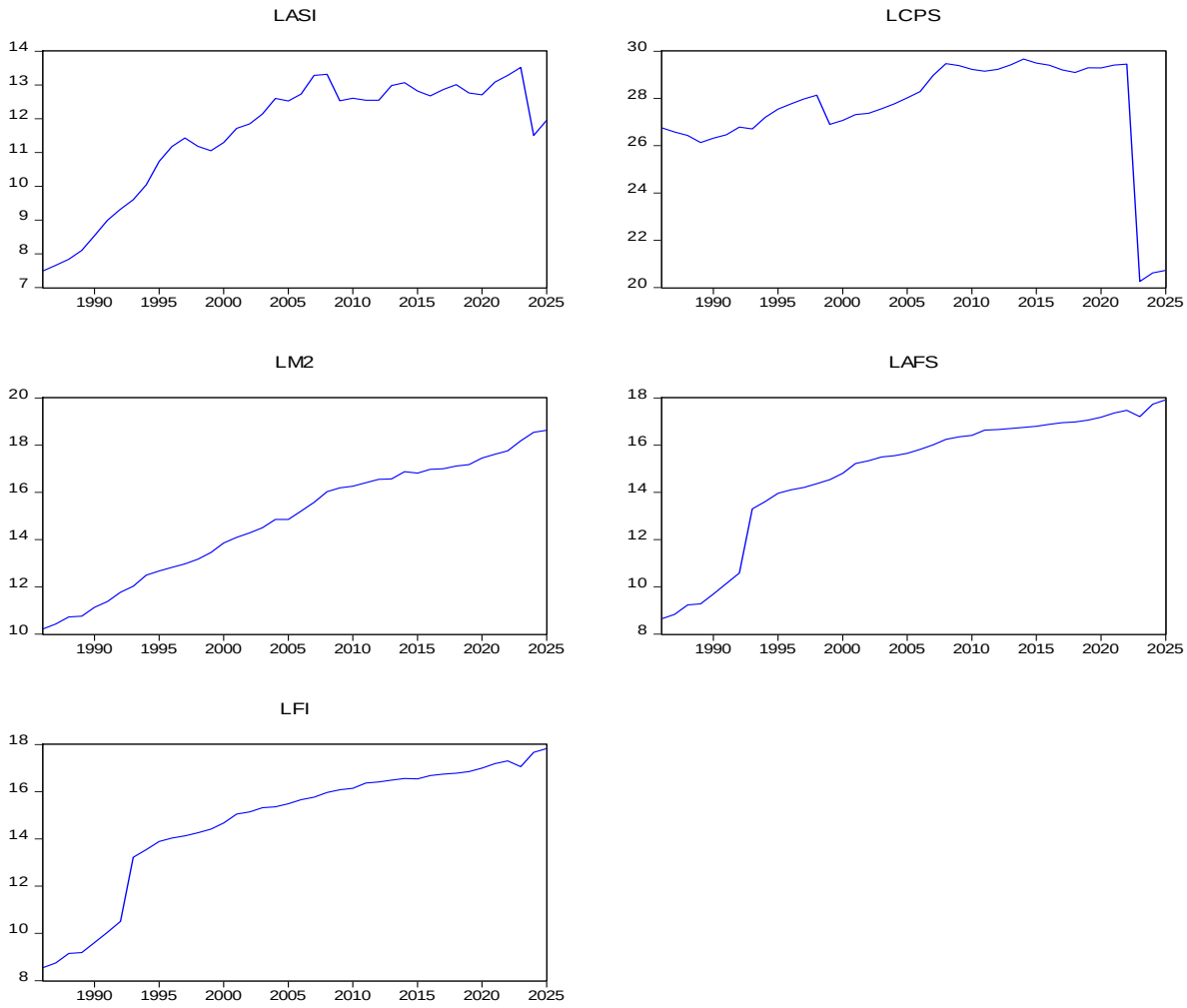


Figure 2: Graph of Log Data

Figure 2 shows the Log data. Stationarity was achieved by logging the data and this is established by the result of the Augmented Dickey-Fuller Test given the p-value below, which is statistically significant at 1%, 5% and 10% levels. The log was done to remove the trend component of the data. The observation now moves irregularly but returns to its mean value and having a constant variance.

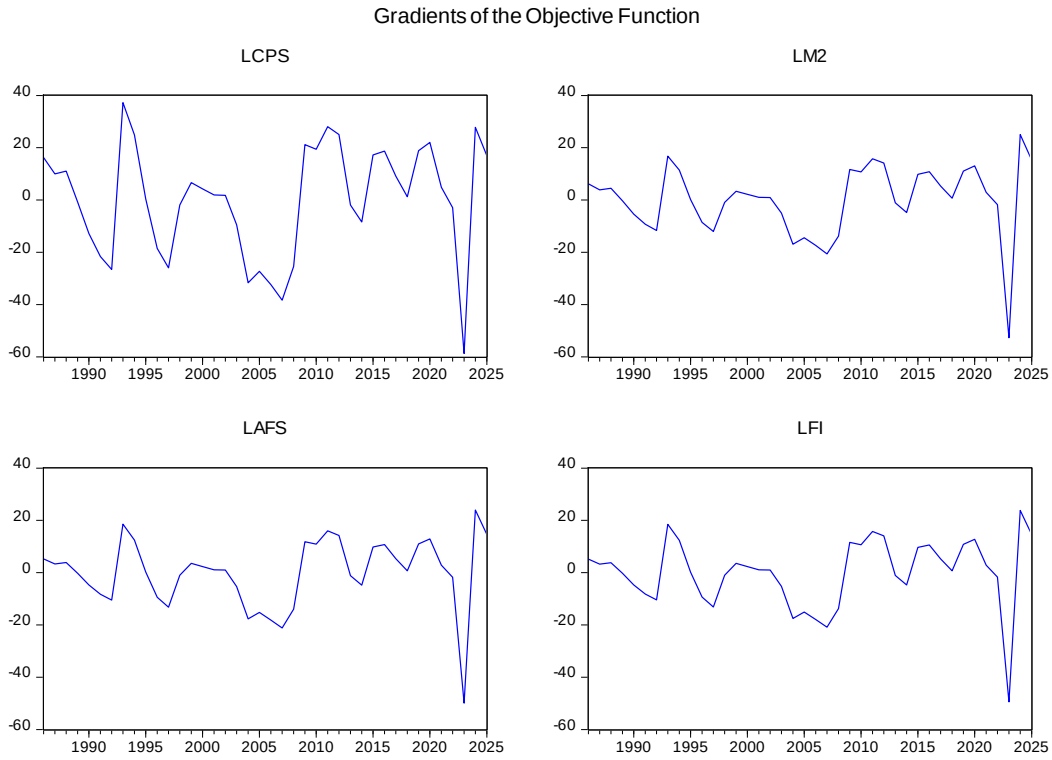


Figure 3: Graph of Gradients of Objective Function

Figure 3 shows the graph of gradient of objective function of all independent variable deployed for this study. So, all the variables were raising and falling (Haphazard) at one period or the other. The observation now moves irregularly but returns to its mean value and having a constant variance.

D. Diagnostics Test

1. Normality Test

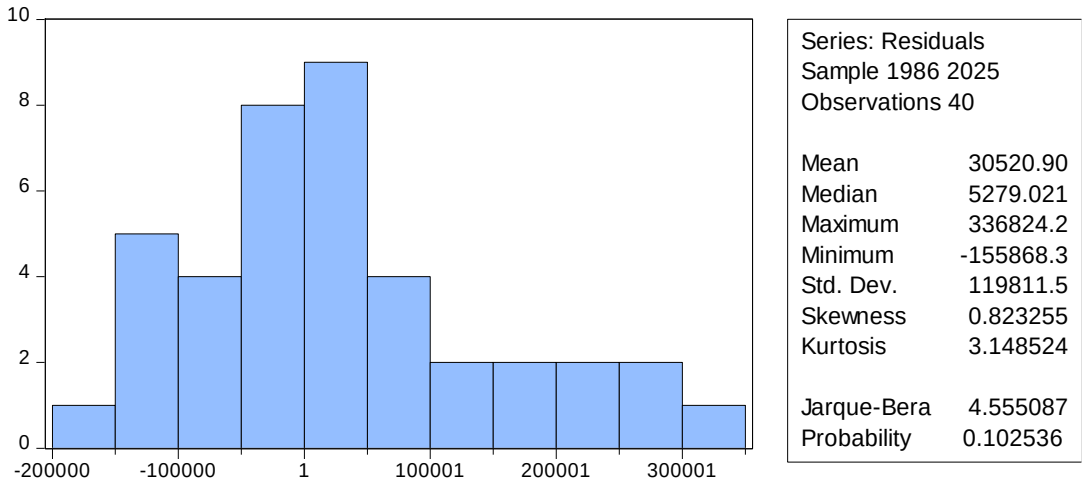


Figure 4: Histogram Normality Test

The histogram Normality test shows that the null hypothesis cannot be rejected since the respective p-values are greater than the α-value = 0.05 significant level at lag one. This suggests that the model has successfully captured the relationships between the variables.

2. Breusch-Godfrey Serial Correlation LM Test:

Table 2: Serial Correlation Result

Serial Correlation LM Test: Breusch-Godfrey			
F-statistic	0.734722	Prob. F(4,35)	0.5745
Obs*R-squared	3.098550	Prob. Chi-Square(4)	0.5415
Scaled explained SS	3.601109	Prob. Chi-Square(4)	0.4627

The Serial Correlation LM Test results, shows that under the null hypothesis of "no serial correlation", the test statistic F-statistic is 0.734722 in the Breusch-Godfrey Serial Correlation LM test is insignificant, with a p- value of 0.5745. This inferred that the estimated model is suggesting no serial correlation in the lags of its residual.

3. Heteroskedasticity Test:

Table 3: Heteroskedasticity Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.734722	Prob. F(4,35)	0.5745
Obs*R-squared	3.098550	Prob. Chi-Square(4)	0.5415
Scaled explained SS	3.601109	Prob. Chi-Square(4)	0.4627

The Heteroscedasticity Test results, indicate no significant evidence of heteroscedasticity within the residuals, supporting the assumption of constant variance. The joint test yields F- statistic of 0.734722 with a probability value of 0.5745, suggesting that the null hypothesis of homoscedastic residuals cannot be rejected. Furthermore, the individual component tests for each individual product display similarly high probability values (all above 0.05) across both the F-tests and Chi-square tests, confirming the absence of significant heteroscedasticity in each case. These results collectively affirm the presence of constant variance within the model.

4. Unit Root Test for Stationarity

Table 4: Augmented Dickey Fuller Unit Root Stationarity Results

Variables	**ADF Statistics**	**Critical Value**	**P-Value**		**Decision**	
			I(0)	**I(1)**	**I(0)**	**I(1)**
LASI	-5.153314	1%, 5%, 10%	0.6039	0.0010	FTR**	Reject*
LCPS	-6.591789	1%, 5%, 10%	0.9738	0.0000	FTR**	Reject*
LM2	-5.656369	1%, 5%, 10%	0.8550	0.0002	FTR**	Reject*
LAFS	-5.720271	1%, 5%, 10%	0.7945	0.0002	FTR**	Reject*
LFI	-5.616118	1%, 5%, 10%	0.7538	0.0002	FTR**	Reject*

The Augmented Dickey-Fuller (ADF) results disclose that all variables are non-stationary at levels but become stationary after first differencing. This implies that the series are integrated of order one, I (1).

Table 5: Phillips –Perron Unit Root Stationarity Results

Variables	PP Statistics	Critical Value	P-Value		Decision	
			I(0)	I(1)	I(0)	I(1)
LASI	-4.376953	1%, 5%, 10%	0.8177	0.0070	FTR**	Reject*
LCPS	-0.592164	1%, 5%, 10%	0.9738	0.0002	FTR**	Reject*
LM2	-5.657231	1%, 5%, 10%	0.8550	0.0002	FTR**	Reject*
LAFS	-5.721613	1%, 5%, 10%	0.7921	0.0002	FTR**	Reject*
LFI	-5.614612	1%, 5%, 10%	0.7504	0.0002	FTR**	Reject*

The result of the Philip-Perron test in table 4 shows that, the six variables (CPS, M2, ASI, AFS and FI) went through unit root test and all the variables were found to be non-stationary at levels but were found to be stationary after first difference. However, they were statistically significant at 1%. The result of the Philip-Perron test shows that the variables were stationary at first difference because the p-value for all the variables was less than 1% level of significant.

The ADF and PP unit root tests revealed that the variables were in the I(1) order of integration. The study proceeds to use the least square method of analysis.

E. Least Squares Method Regression

Table 6: Least Squares Method Result

Dependent Variable: LASI **Method: Least Squares**				
Variable	Coefficient	**Std. Error**	**t-Statistic**	**Prob.**
LCPS	0.099500	0.014088	7.062947	0.0000
LM2	0.003374	0.080409	0.041966	0.9668
LAFS	3.792736	1.290138	2.939791	0.0057
LFI	-3.238600	1.298023	-2.495025	0.0173
R-squared:	0.942082			
Adj. R-squared:	0.937256			

The Least Squares Method results shown in the table 5. At the 5% level of significance, the estimation results show that LCPS, LM2, LAFS and LFI have a significant impact on Nigeria's all share index. The coefficient of credit to private sector, money supply and access to financial service are positive (0.099500, 0.003374 and 3.792736) implying that a unit rise in credit to private sector, money supply and access to financial service would result in a 0.0995, 0.0034 and 3.7927 unit increases in the overall performance of stock market in Nigeria with probability value of 0.0000, 0.9668 and 0.0057 implying that CPS and AFS are statistically significant at 1% but M2 is not statistically significant between the period under review. Whereas the coefficient of financial inclusion is negative (3.238600) implying that a unit increase in financial inclusion would result in a 3.238 unit decreases in all share index which measured the overall performance of stock market in Nigeria with probability value of 0.0173 implying that financial inclusion is statistically significant between the period under

review. This suggests that financial inclusion has a negative and significant effect on all share index, meaning that a raise in financial inclusion has never disturbed the growth of the stock market due to the massive foreign investment chances that flourish to boost stock market in the country.

Furthermore, the R-squared provides the predictive power of a model, which is calculated to be 0.942082. This suggests that the current year's credit to private sector, money supply, access to financial service and financial inclusion explains approximately 94 percent of the systematic variance in all share index in Nigeria from 1986 to 2025. Therefore, the null hypothesis which states that "the financial deepening in Nigeria is not statistically significantly impacted by all share index" is rejected.

III. CONCLUSION OF THE STUDY

This study examined the impact of financial deepening indicators on all share index in Nigeria using least squares method of analysis with annual data from 1986 to 2025, addressing a key gap in the literature: most prior studies focused on economic growth or poverty reduction or macroeconomics performance or credit to private sector or money supply or market capitalization rather than directly on all share index, and few employed a multivariate dynamic model with multiple deepening indicators simultaneously. Regarding to objective (i), examine the impact of credit to private sector on all share index in Nigeria, which support the work of Jimoh (2026), Nkamnebe et al. (2023), and Samuel-Hope et al. (2020), but not in support of Albert et al. (2021) who argue that there is no significant impact of credit to private sector on all share index. Objective (ii), assess the relationship between money supply and all share index in Nigeria, in line with Okafor et al. (2021), Jimoh et al. (2026), and Oyadeyi et al. (2022), but in contrast to Nwosa (2018). In objective (iii), adjust the influence of access to financial service on all share index in Nigeria, which is consistent with Jimoh and Obaka; Jimoh (2026) and Olusegun et al. (2021). On objective (iv), evaluate the impact of financial inclusion on all share index in Nigeria indicated that there is no significant impact of financial inclusion on all share index in Nigeria supported by Jimoh et al. (2026). Generally, financial deepening has enhanced all share index and the overall performance of stock market in Nigeria between the periods under review. The study, therefore covers the gap with solid, indication of credit allocation and provides a recommendation of better-quality delivery of credit, efficiency in the capital market and financial system modifications.

RECOMMENDATIONS

The study recommended that Nigeria Stock Exchange should educated the masses on financial markets operation especially about shares of companies and how it operates and to ensure the markets is monitor by the right agencies in order to avoid misconducts and boost private sector participation. Similarly, the development of the money and capital markets should be ordered by the administrators of macroeconomic in the country to enlarge the level of economic growth in the country. Finally, the study also recommended that central bank should encourage financial liberalization in the economy and to helps in regulating credit controls and allowing market to dogged real interest rates and legislate a policy that allow financial penetration across the nation.

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