



# Financial Deepening and Economic Growth of Nigeria: An Empirical Analysis

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Abstract	Original Research Article
<p>The place of financial deepening in economic growth has always been a subject of attraction to economist and financial experts. This is in view of its role in mobilizing and allocating resources to various economic units for rapid Economic Growth (EG). This paper attempts to investigate the extent to which the Nigerian financial sector has played this role between 1990 and 2024. The time series data obtained from Central Bank of Nigeria statistical Bulletin was subjected to unit root test using Augmented Dickey-Fuller (ADF) to test the stationarity of the data. Thereafter the co-integration test was carried out and Error Correction Model estimates were obtained. The result shows that all the independent variables of Credit to Private Sector (CTPS), Market Capitalisation (MKTC), Prime Lending Rate (PLR) and Broad Money Supply (M2) were positive and statistically significant to EG. It was therefore recommended among others, that the volume of money supply consistent with the growth rate of the economy be worked out and followed religiously. It was also recommended that the capital market be made attractive to both local and international investors in order to boost market capitalization which is one of the evidence of a deepened financial system.</p> <p><b>Keywords:</b> Prime Lending Rate, Market Capitalisation, Broad Money Supply, Credit to Private Sector and Economic Growth.</p>	

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## INTRODUCTION:

The robustness of the financial system that is consistent with growth rate of the economy is a major concern to economist the world over. In Nigeria, the financial system consist of monetary and fiscal policy institutions like the banks, insurance companies, pension fund administrators, capital markets etc. The question now is to what extent have these institutions played their roles to widen the space of financial inclusiveness? The answer to this question will go a long way to determine whether financial deepening has been robust enough in

supporting EG in Nigeria. Since 1986 when the Nigeria economy started to experience the Structural Adjustment, many companies began to go under, due largely to inadequate foreign exchange to continue production. The backward integration policy of the government did not yield much result as the economy has always been driven by reliance on foreign inputs. This has continued to impact negatively on investment opportunities and growth potentials of Nigerian economy (Ozigbo and Ekane,( 2022). In terms of access to financial services, records available show that even though more people are



now captured in financial services delivery via the digital platforms, a lot still need to be done to bring in those rural dwellers (CBN, 2024). Another aspect of financial deepening which has to do with adequate money supply to the productive sector of the economy has left so much to be desired. The monetarist believes that a safe level of money supply is one which grows in tandem with the projected growth rate of the economy (Onoh, 2024). That is to say, if the economy is projected to grow at an annual rate of 5%, money supply should also grow by that same rate. This though consistent with international best practices has never been followed in Nigerian due to the fact that money supply in Nigeria is based mainly on broad money supply ( $M_2$ ) as a developing economy.

As to whether the financial markets are well developed and diversified, a lot still need to be done. The recent recapitalization of banks in Nigeria is a pointed to the fact that many of the existing banks were operating below the minimum bench mark hence many could not cope with adequate support to the public and private sector expansion (CBN, 2024). Another aspect of a deepened financial system has to do with the extent to which the capital market is developed and diversified. In Nigeria for example, insider trading, information asymmetry, corporate governance and disclosure requirements, foreign exchange risk and technological gaps have continued to impact negatively on the ability of the capital market to meet its mandate (World Bank, 2023). Given the above scenario, we can say that there is need to investigate the extent to which financial deepening in Nigeria has impacted the rate of growth of the economy. Previous works by Ojo (2023), Kings,(2023) as well as Ajudua and Odisika,(2022) were either narrow in scope in their studies or utilized data which are today obsolete. This study is therefore being carried out to bridge these gaps.

## OBJECTIVE OF THE STUDY

The main objective of this research is to investigate the extent to which financial deepening support economic growth in Nigeria. This will take account of the period between 1990 and 2024. Other specific objectives are to:

- investigate whether credit to private sector influence economic growth;
- find out the extent to which broad money supply ( $M_2$ ) impact economic growth;
- evaluate whether market capitalization affect economic growth in Nigeria;
- Determine the extent to which prime lending rate impact economic growth in Nigeria.

## LITERATURE REVIEW

The work Darat (2016) is one of the outstanding study in this field. He investigated the role of financial deepening in shaping EG of three countries in the Middle East namely, Saudi Arabia, Turkey and United Arab Emirates. The multivariate Granger-Causality test as well as Error correction Model was utilized. It was discovered that financial deepening was a major factor of EG even though the magnitude varies among the countries studied.

In another study by Alrabadi and Kharabsheh (2022) on the relationship between financial deepening and EG in Jordan and employing quarterly data over the period of 1990 – 2020. The Granger causality, Vector Auto Regressive method was used. The result revealed that a bi-directional causality exist between financial deepening and economic growth when the former was measured by the amount of credit given to the private sector and a one-way causal relationship existed between financial deepening and EG.

Kings,(2023) studied the relationship existing between financial deepening and EG for ten emerging economies in South East Asia using Error Correction Model between 1996 and 2022. Financial deepening was proxy by (ratio of liquidity to GDP, bank credit to GDP and private sector credit to GDP). The result shows that financial deepening has a positive significant relationship to EG.

In Malaysia, Sanusi and Sallah (2022) studied the relationship between financial development and EG between the period 1990 and 2021. They employed ratio of broad money to GDP, credit by banks to GDP as proxies for financial development. Using autoregressive distributed lag method, they discovered that the ratio of broad money to GDP and Credit to private sector by banks have positive and

statistical significance on economic EG in the long-run.

Agyei (2024) examined the relationship between financial deepening and EG in Ghana between (1990 and 2022) He used Vector Error Correction, Model (VECM) as well as Cointegration techniques. It was revealed that a unidirectional linkage exist between financial deepening and EG.

Also in Ghana, Marbuah and Mensah (2023) researched the long run relationship of financial deepening on the economy of that country between 1990 and 2022, private sector credit to GDP, total credit ratio to aggregate bank liabilities ratio, money supply ratio to GDP were adopted as proxy for financial deepening. It was revealed that all the explanation variables were statistically significant in explaining changes in economic EG.

Here in Nigeria, while investigating stock market using (GACH) model, Nwezeaku and Opara (2021) discovered that a high level of financial deepening reduces the level volatility in stock market risk. Also, in Nigeria, Nwosu, Itodo and Ogbonuaya (2021) evaluated the impact of financial deepening on the economy using autoregressive distributed lag approach. The study revealed that financial deepening has a strong positive impact on the economy.

In a similar study, Ajudua and Odishika (2022) Utilising annual time series data from 1986 to 2020 examined the impact of financial deepening variables like money supply, market capitalisation, loans to private sector and lending rates on economic development of Nigeria. Using auto-regressive distributed lag approach (ARDL). It was revealed by the result of this study that all the independent variables listed above exhibited a positive and strong relationship with EG within the period.

Anachedo and Osakwee (2023) also studied the influence of financial deepening on EG of Nigeria.

They used annual time series data between 1985 and 2021. Employing the Ordinary Least Square OLS regression Method, and also the Granger causality Test. They found out that market capitalizations as a percentage of GDP, credit to private sector were positively and statistically significant to economic growth. While money supply showed a negative relationship with EG.

## METHODOLOGY

This study is focused on the impact of financial deepening on EG in Nigeria with reference to the period 1990 to 2024. The ex-post facto research design was utilized and secondary data were sourced from the Central Bank of Nigeria statistical Bulletin for various years.

The descriptive statistics was first obtained by e-views 10 and thereafter the correlation matrix. The unit root test was also conducted to ascertain whether the variables were stationery and Johansen cointegration test conducted to find out the long run relationship of the variables. Based on the Error Correction Model (ECM) technique, the parsimonious estimates of the data was then obtained to enable the estimated parameters to be analysed for conclusion to be drawn.

## THEORETICAL UNDERPINING

The model for this study is based on Patrick (1966) Supply-Leading Hypothesis. It states that financial deepening comes before economic growth. This is because financial services have to be made available in advance before demand sets in. Hence a well-developed financial environment provides growth opportunities for the economy to take advantage of. This implies that growth is a function of financial deepening.

**Model Specification**

RGDP = f(Financial deepening) ..... (1)

Proxying FD by the following variables: (TPS, M<sub>2</sub>, MKTC, PLR

We have:

RGDP = f(CTPS, M<sub>2</sub>, MKTC, PLR)

Where:

RGDP = Rate of growth of gross domestic product

CTPS = Credit to private sector by banks

M<sub>2</sub> = Broad money supply i.e.  
Time deposit and savings

MKTC = Market capitalization

PLR = Prime Lending Rate

Modeling econometrically therefore we have:

RGDP =  $\alpha_0 + \alpha_1$  CTPS +  $\alpha_2$  M<sub>2</sub> +  $\alpha_3$  MKTC +  $\alpha_4$  PLR + U<sub>t</sub>

CTPS >0, M<sub>2</sub> > 0, MKTC >0, PLR >0

U<sub>t</sub> = Error Term

Table I Descriptive Statistics

	RGDP	PLR	MKTC	M2	CTPS
Mean	21036588	24.40000	445671.3	1598365.	14329.97
Median	1672202.	25.00000	96730.84	1687674.	14083.00
Maximum	4.42E+08	27.00000	987698.2	2987657.	26754.00
Minimum	1235674.	20.00000	180.4000	64932.00	1201.000
Std. Dev.	73994252	1.701211	456344.8	1006428.	8331.048
Skewness	5.482046	-0.644401	0.119908	-0.052777	-0.185456
Kurtosis	31.71691	2.814991	1.076638	1.737334	2.084634
Jarque-Bera	1377.939	2.472225	5.478716	2.341305	1.422561
Probability	0.000000	0.290511	0.064612	0.310164	0.491015
Sum	7.36E+08	854.0000	15598495	55942769	501549.0
Sum Sq. Dev.	1.86E+17	98.40000	7.08E+12	3.44E+13	2.36E+09
Observations	35	35	35	35	35

Source: E- Views 10 Output

The mean for RGDP was 21036588 and is higher than the median of 1672202 indicating that it was on the increase within the period. The standard deviation of 73994252 show some moderate deviation from the mean. The PLR had a mean of 24.4 while its median was 25.0. This negative difference shows that PLR was retarded within the period. The standard deviation of 1.7 shows a marginal deviation from the mean. MKTC came out with a mean of 445671 and median of 96730

reflecting that MKTC also retarded with in this period. The Skewness which measures the level of asymmetry shows all the series are negatively skewed except RGDP and MKTC. The Kurtosis which measures the peakedness or flatness of the series indicates a value of 2.8 which is very close to the bench of 3. From the result only MKTC is close to being normally distributed with a Value of Jaque-Bera of 0.06 which is close to 0.05 bench mark.

Table II Correlation Matrix

	RGDP	PLR	MKTC	M2	CTPS
RGDP	1	0.239295961	0.274604170	0.347298683	0.361820451
PLR	1669633	1	0.600815692	0.577077509	0.613297789
MKTC	1319763	9959614	1	0.804320934	0.737820911
M2	771145	2479058	9650981	1	0.901074935
CTPS	3803232	4062944	1927124	0110502	1

Source: E- Views 10 Output

The correlation coefficient between the independent variables and the dependent variable shows that the correlation coefficient between RGDP and PLR is 0.23 indicating a weak correlation. That of RGDP and MKTC is 0.27 also a weak correlation. Again that of RGDP and M2 is 0.34 implying a weak

correlation and lastly 0.36 is the correlation between RGDP and CTPS also a very weak correlation. In general, the weak correlation existing between the dependent variable and all the independent variables indicate the absence of multicollinearity in the model.

Table III Adf Unit Root Test

Variable	Level Data	First Difference	1%	5%	Order of Integration
RGDP	-1.64	-6.22	3.67	2.96	1(1)*

PLR	1.96	-3.87	3.67	2.96	1(1)*
MKTC	-0.06	-3.56	3.67	-2.96	1(1)**
M2	-3.09	-5.38	3.67	-2.96	1(0)*
CTPS	-2.18	-5.15	3.67	-2.96	1(1)*

NB: \* Indicate significant at 1%

\*\* Indicate significant at 5%

Source: E-Views 10 Computation by Author.

From the table above all the variables except MKTC were not originally stationary. But they became stationary when the first difference was taken. This now brings us to cointegration test.

Table IV Summary of Johansen Cointegration Test

Unrestricted Cointegration Rank Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.763104	93.70415	68.52	76.07
At most 1 *	0.582739	49.05995	47.21	54.46
At most 2	0.340873	21.96458	29.68	35.65
At most 3	0.227326	9.042568	15.41	20.04
At most 4	0.033233	1.047723	3.76	6.65

(\*\*) denotes rejection of the hypothesis at the 5%(1%) level  
 Trace test indicates 2 cointegrating equation(s) at the 5% level  
 Trace test indicates 1 cointegrating equation(s) at the 1% level

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.763104	44.64420	33.46	38.77
At most 1 *	0.582739	27.09537	27.07	32.24
At most 2	0.340873	12.92201	20.97	25.52
At most 3	0.227326	7.994845	14.07	18.63
At most 4	0.033233	1.047723	3.76	6.65

(\*\*) denotes rejection of the hypothesis at the 5%(1%) level  
 Max-eigenvalue test indicates 2 cointegrating equation(s) at the 5% level  
 Max-eigenvalue test indicates 1 cointegrating equation(s) at the 1% level

Source: E-Views 10 Output

The result of the Johansen cointegration test in both the trace statistic and Max-Eigen statistic indicates two cointegrating equations in each case. This is an indication of the existence of long-run relationship among the variables. The existence of a long run relationship provides a basis for us to conduct the

Error Correction Model (ECM) analysis. This was done by deleting the insignificant variables form the over parameterized ECM result to arrive at the parsimonious ECM result,. This gives us a better avenue to ascertain the significance of the independent variables and their magnitude.

**Table V Parsimonious ECM Result**

Variable	Coefficient	Std Error	t-Statistic	Prob
MKTC(-1)	0.401249	0.281116	3.12556	0.0001
PLR	0.16804	0.031048	7.461582	0.0000
M <sub>2</sub> (-1)	0.151327	0.037201	3.145196	0.0000
CTPS	0.388393	0.040331	5.611271	0.0001
ECM(-1)	-0.356471	0.054921	-4.312112	0.0000
C	6.526656	0.500844	10.1128123	0.0000

$R = 0.88, R^2 = 0.64, AIC = -1.90, SC = -1.63, DW = 2.12, t_{critical} = 1.96$

Source: E-Views 10 Computation by Author.

**RESULTS AND DISCUSSION**

The regression result as stated above follows the a priori expectation that the independent variables of prime lending rate (PLR), Market Capitalisation (MKTC) Broad Money Supply (M<sub>2</sub>) and Credit to private sector (CTPS) have positive impact or relationship with GDP growth rate The result further shows that a unit change in MK|TC will result in 0.40 unit change in growth rate of GDP in the short-run. Also the coefficient of PLR is 0.16, meaning that a unit change in PLR will result in 0.16 increase in

RGDP in the short-run. This result also reveals that M<sub>2</sub> coefficient is 0.15 and positively significant in the short-run. This implies that a unit change in M<sub>2</sub> will bring about 0.15 unit change in RGDP. And lastly the coefficient of CTPS is 0.38 implying that a unit increase in CTPS will bring about 0.38 unit increase to RGDP in the short-run. With a negative ECM of -0.35, it means that 35% of the error in each period is corrected in the next period (in the long-run). The coefficient of determination R<sup>2</sup> is 0.64. This is an indication that 64% of changes the rate of

Growth of GDP is accounted for by the independent variables while only about 36% are unexplained by the model but captured by the error term. The result further shows that MKTC and PLR lagged by one period as well as M<sub>2</sub> and CTPS lagged by one period with t-values of 3.2556, 7.46158, 3.145196 and 5.611271 and probabilities of 0.0001, 0.0000, 0.0000, 0.0001 and 0.0000 are statistically significant in accounting for the changes in RGDP.

The Breusch Godfrey test LM test of 0.53 probability does not support serial correlation of the residuals. The heteroskedasticity test of 0.6 probability shows that the residuals are normally distributed. The cumulative sum of Recursive Residuals test revealed that the model is stable i.e. the line fell within the two 5% lines.

Table VI Heteroskedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.584706	Prob. F(4,30)	0.6761
Obs*R-squared	2.531289	Prob. Chi-Square(4)	0.6390
Scaled explained SS	25.29996	Prob. Chi-Square(4)	0.0000

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 01/12/26 Time: 11:32  
 Sample: 1990 2024  
 Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.25E+16	7.64E+16	-0.163145	0.8715
PLR	2.38E+14	3.33E+15	0.071543	0.9434
MKTC	-3.49E+09	1.65E+10	-0.211568	0.8339
M2	2.05E+09	1.12E+10	0.183471	0.8557
CTPS	6.65E+11	1.23E+12	0.540616	0.5928

R-squared	0.072323	Mean dependent var	4.61E+15
Adjusted R-squared	-0.051368	S.D. dependent var	2.44E+16
S.E. of regression	2.50E+16	Akaike info criterion	78.48420
Sum squared resid	1.87E+34	Schwarz criterion	78.70639
Log likelihood	-1368.474	Hannan-Quinn criter.	78.56090
F-statistic	0.584706	Durbin-Watson stat	1.109642
Prob(F-statistic)	0.676126		

Source: E- Views 10 Output

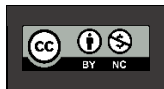
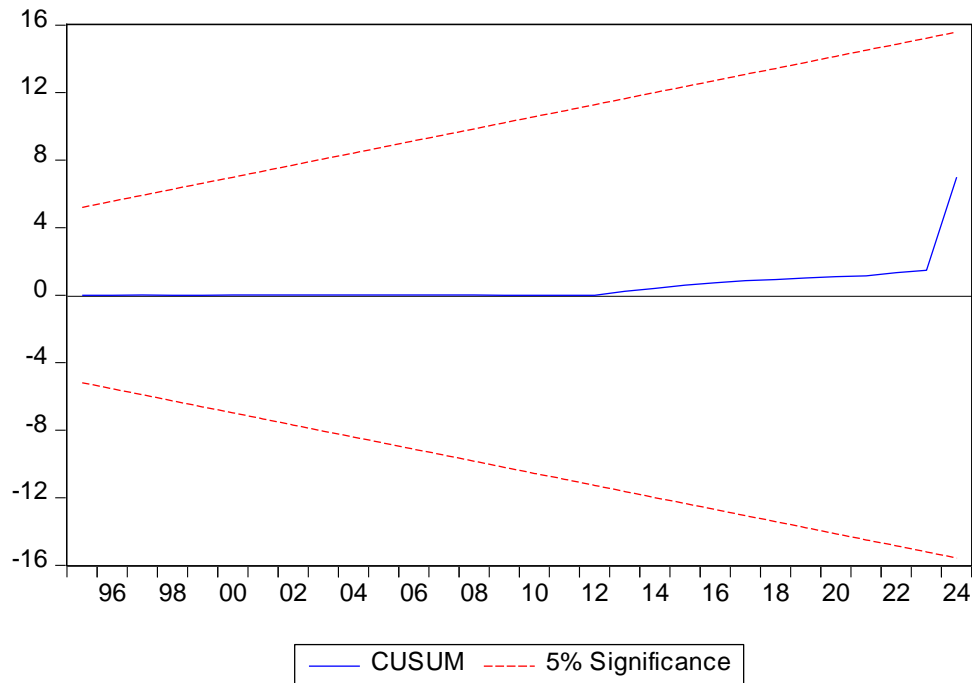


Figure 1 Cusum Graphical Output



E-Views 10 Output

## DISCUSSION OF RESULT

The result for this study is in line with the outcome of (Darat, 2016) who found out that financial deepening was a major factor of economic growth in three countries in Middle East namely Saudi Arabia, Turkey and United Arab Emirate. Also the outcome of this study aligns with the result of a study by Yavus and Guris (2023) of ten economies of South East Asian economies where it was revealed that financial deepening has a strong positive relationship with economic growth.

The outcome of the study carried out by Sanusi and Sallah (2022) in Malaysia conforms with the result of this study where they discovered that the ratio of borrowed money to GDP and Credit to private sector by banks had positive and statistically significant to economic growth.

However the result of the study carried out in Nigeria by Anachedo and Osakwee (2023) is not in line with the outcome of our study. They found out that while

other independent variables like, marked capitalizations as a ratio to GDP and credit to private sector were positively significant to GDP, Money Supply was negatively related to GDP within the same period.

Other similar studies Alrabadi and Kharabsheh (2022), Adjudua and Odishika (2022), Bloch and Tang (2022), Khan and Saeed(2025) revealed similar outcome with the results of this studies.

## Conclusion

This study was on the impact of financial deepening on economic growth in Nigeria between 1990 and 2024. It was anchored on Patrick (1966) Supply-leading Hypothesis. The result revealed that all the independent variables – CTPS, M2, MKTC, OLR were all positively significant to variation in RGDP during the period. Based the above the study concludes that though all these independent variable were significant, their impact on the RGDP is too fragile to sustain long-run growth of the economy.

## RECOMMENDATIONS

Based on our conclusion, the following recommendations are therefore suggested:

- i. The federal and state authorities should open up the economy in order to widen the space for more participation. This can be done by creating the enabling environment for investment by private sector participation.
- ii. Policies like the anchor borrowers programme of the CBN should be revived and sustained. And credit should be made easy to access by lowering the interest rate.
- iii. The volume of money supply consistent with the growth rate of the economy should be worked out and adopted. Based on international best practice, and in line with the monetary school of thought, a safe level of money supply is one which grows in tandem with the projected growth rate of the economy. That is to say if the economy is projected to grow at an annual rate of 5%, money supply should also grow at the same rate.
- iv. The capital market has always formed the bedrock of growth of modern economies. Here in Nigeria, the position is not the same judging from its fragile impact on the economy as evidenced from this study. Therefore all bottle necks measures that had impeded free flow of capital especially across borders should be removed. Foreign portfolios and local ones can only thrive when the investors are sure of adequate return on the investments. This will increase the volume of market capitalization both in the short and long run.

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