



## Does Financial Deepening Influence Economic Growth? A Case of Nigeria

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**Abstract:** *This article examines the impact of growing financial markets on Nigeria's economic expansion between 1988 and 2021. Our model was estimated using VAR. We use the natural logarithm of GDP as a proxy for economic growth, and we use private sector credit to GDP and the broad money supply to GDP as proxies for financial depth. During the research period, private sector lending had a detrimental effect on economic growth, although the overall money supply had a positive effect. Economic growth declined by 1.03% when lending to the private sector changed by 1%. When the overall money supply changed by 1%, the economy expanded by 1.2%. Even though the two main indicators had opposing effects, they are both crucial for predicting Nigeria's economic growth. We urge monetary authorities to support rapid and sustained growth as well as efficient money distribution in order to increase Nigeria's financial stability.*

**Key Words:** *Financial deepening ; Economic growth ; Nigeria.*

### 1. INTRODUCTION :

Financial deepening, according to Rousseau and Wachtel (2015), shows the financial sector is healthy and capable of making loans and deposits. According to the financial deepening theory, the financial sector's size determines how well it contributes to economic growth. (Gezer, 2018). It is believed that economies with more intermediaries produce allocations that are more efficient. (2015) Financial deepening is the increased availability of financial services with a larger selection of services geared toward all societal levels. (2018). Measures of the financial sector's size include "intermediation ratio" and "monetization ratio." Bank-based indicators like bank loans to the private sector and capital market-based metrics like stock market capitalization ratio make up the intermediation ratio (Werigbelegha and Ogiriki, 2018). Institutions, instruments, and regulators in the financial system. It refers to the institutions, people, and rules that interact with one another and the outside world to support a country's economic development and progress (Gezer, 2018) According to Ndebbio (2004), financial strength is essential for economic expansion and progress. He asserted that substantial financial assets are required to go along with high per capita income. Knowing these assets is a must in order to assess financial deepening. Financial deepening entails increasing the availability of financial assets in the economy (Onyinyechi, 2019). Financial deepening is measured by the total value of all financial assets. Thus, the measure of financial depth must take into account broad money, non-bank financial intermediary liabilities, treasury bills, stock market shares, money market funds, etc (Ndebbio, 2004). The M2/GDP ratio was used in this analysis due to a lack of reliable data on the various financial asset metrics that were anticipated to adequately approximate financial deepening in the majority of SSA countries, including Nigeria. Economic financial deepening is likely to be shallow if the growth in the supply of financial assets is moderate; if it is high, it is likely to be substantial (Ademola and Marshal, 2018).

### 2. LITERATURE REVIEW

In their 2017 study, Karimo and Ogbonna examined Nigeria's economic expansion and financial deepening between 1970 and 2013. The Granger causality test with Toda-Yamamoto augmentation was utilised. Nigeria's expanding growth-financial relationship reflects the supply-leading theory. The study claims that financial depth influences growth rather than growth itself. According to the study, barriers to private sector loan expansion should be lowered, and investor confidence in stock market operations should be rebuilt.

From 1985 to 2014, Nwant to and Chinwudu (2016) examined Nigeria's economic growth and financial deepening. The essay concentrated on the effects of bank depth and the stock market on Nigeria's economic expansion. The study used Central Bank of Nigeria data from 1985 to 2014. OLS econometrics were employed in the study. The results show that



financial deepening proxies on the stock market and banks both promote economic development. The study suggested encouraging greater stock market participation, removing restrictions on overseas funding, and listing more businesses.

A 2016 study by Alrabadi and Kharabsheh examined Jordan's financial stability and economic expansion (1992-2014). The research employed Johansen-Juselius integration tests, Granger causality, and vector autoregressive regressions. Quarterly data revealed no statistically significant relationship between financial deepening and development of the short-term economy. Cointegration analysis showed a statistically significant long-run equilibrium relationship between the two variables, regardless of the proxy used to measure financial depth. The Granger causality test discovered a two-way relationship between financial deepening as measured by private sector lending and economic growth. A one-way causal link was found when deposits and M2 were used as proxies for financial deepening.

From 2001 to 2016, the economic growth of Indonesian provinces was examined by Harisuddin and Hartono (2019). Financial deepening and regional economic growth are found to be positively associated using a panel data approach. The writers recommended that the government expand the nation's financial system, particularly through banking.

Ibrahim and Shuaibu (2013) used the framework developed by Pesaran et al ARDL and Toda and Yamamoto's augmented Granger causality test to analyse Nigeria's finance-growth nexus for the years 1970–2010. Real gross domestic product (EG) was used as a measure of economic growth, and the ratio of broad money to GDP (MG), which captures financial development, population growth (POP), and gross fixed capital formation (GFCF), were also included as explanatory variables in the empirical design. Empirically, financial development affects both short- and long-term economic growth. Financial advancement leads to growth, according to the Toda-Yamamoto causality test.

Sanni (2012) examined the foreign capital inflows, financial development, and economic expansion of Nigeria between 1986 and 2009. We looked at real GDP, total capital inflows, and money supply. Positive cointegration between foreign capital inflows, financial deepening, and economic development is observed, and at least one cointegrating vector is at the 5% threshold, indicating a long-term connection. Nigeria's economy benefits from foreign capital inflows and financial deepening; hence, economic policy should concentrate on fostering these elements.

From 1985 to 2014, Nwant to and Chinwudu (2016) examined Nigeria's economic growth and financial deepening. It focuses on how Nigeria's economic growth is impacted by stock market and bank deepening factors. Regressions on the money supply to GDP, private sector credit to GDP, market capitalization to GDP, and financial saving to GDP were used to analyse changes in economic growth as defined by the GDP growth rate. The banking sector and the stock market in Nigeria both play crucial roles in economic growth, and both stock market and bank-based financial deepening proxies had a significant and favourable impact on economic growth.

In Nigeria from 1986 to 2010, Chukwuka (2012) examined the causal link between financial deepening and economic growth. The study found that long-term economic growth is impacted by financial depth. According to the study's findings, GDP has a favourable impact on deposit money bank assets, the money supply, and private sector lending. It suggested that monetary authorities keep adjusting their policies to strengthen the credibility of the financial sector.

Zimbabwe's banking system and economic development from 1980 to 2006 were researched by Ndlovu (2013). Real GDP per capita, the ratio of liquid liabilities to GDP, the domestic credit-to-private GDP ratio, and the stock market capitalization ratio were all used in the study as indicators of economic growth. Three control variables—inflation, the real interest rate, and the openness of the economy—were also taken into consideration. In Zimbabwe, where economic growth drives financial development, the study illustrated demand-following financial development.

In 2015, Nwafor and Yomi evaluated Nigeria's financial development. Data from 1997 to 2016 were shown in a line graph and subjected to two stages of least squares regression analysis. Economic growth is impacted by financial depth, according to the tested theory. Data show that financial depth has been gradually expanding. To promote financial deepening, it was suggested that the country's limited credit availability be relaxed.

### 3.1 METHOD AND DATA

The source of data for this study is from secondary source. All data for variables used in our analyses were obtained from the Central Bank of Nigeria (CBN) statistical bulletin (2018) for the period 1985-2018. To test our stated hypothesis, we represent our model as follows:



$$\text{LogGDP}_t = \beta_0 + \beta_1\text{PSC}_t + \beta_2\text{M2}_t + \beta_3\text{INF}_t + \varepsilon_t \quad (1)$$

Where  $t$  denotes time,

- LogGDP = Natural logarithm of Gross Domestic Product
- PSC = Ratio of private sector credit to GDP
- M2 = Ratio of money supply to GDP,
- INF = Inflation rate
- $\beta_0$  = intercept
- $\beta_1 - \beta_4$  = Coefficients
- $\varepsilon$  = Error term

We conducted descriptive statistics of our model series, and estimated our model using the vector autoregressive (VAR) technique of analysis. We used VAR Lag Order Selection Criteria to select appropriate lags for our variables.

### 4.1 RESULTS AND DISCUSSION :

**Table 1: Descriptive Statistics**

	<b>GDP</b> (₹ Billion)	<b>PSC (%)</b>	<b>M2(%)</b>	<b>INF(%)</b>
Mean	30794.20	11.55074	14.61367	19.69049
Median	9733.197	8.249338	13.09787	12.07481
Maximum	127762.5	20.77330	21.30726	76.75887
Minimum	192.2733	6.217349	9.151674	0.223606
Std. Dev.	38661.73	5.473608	3.951751	18.91575
Skewness	1.25664	0.714269	0.439041	1.675673
Kurtosis	2.936082	1.692454	1.669083	4.681582
Jarque-Bera	7.186136	5.313064	3.601687	19.91726
Probability	0.027514	0.070191	0.165159	0.000047
Sum	1047003.	392.7252	496.8647	669.4767
Sum Sq. Dev.	4.93E+10	988.6926	515.3391	11807.58
Observations	34	34	34	34

Source: Researcher's Computation

Table 1 presents the descriptive statistics of the variables used in our analysis and shows that the mean of GDP was 30794.20 billion while the ratio of private sector credit to GDP averaged 11.55%. Private sector credit ranged between 6.21% and 20.77% over the period. We also observe that the mean of broad money supply as a share of GDP was 14.61%, and was highest at 21.31% and lowest at 9.15%. Furthermore, inflation rate ranged between 0.22% and 76.76% with a mean value of 19.69% between 1985 and 2018. The results also indicate that while private sector credit and broad money supply were normally distributed, GDP and inflation appear not to show signs of normal distribution. PSC and M2 are normally distributed which is indicated by the p-value of the Jarque-Bera (J-B) statistics for PSC and M2 are greater than 5% which indicates normality while GDP and INF with the p-value of J-B statistics being less than 5%.

### 4.3 Vector Autoregressive (VAR) Regression Result

**Table 3. VAR Results**

Dependent Variable: LOGGDP				
LOGGDP = C(1)*LOGGDP(-1) + C(2)*PSC(-1) + C(3)*M2(-1) + C(4)*INF(-1) + C(5)				
	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP(-1)	0.995451	0.010239	97.21681	0.0000
PSC(-1)	-0.010308	0.003239	-3.182046	0.0036
M2(-1)	0.011962	0.004645	2.574929	0.0156



INF(-1)	0.001235	0.000309	3.995661	0.0004
Intercept	0.022567	0.037628	0.599739	0.5535
R-squared	0.878979	Mean dependent var		3.932309
Adjusted R-squared	0.838833	S.D. dependent var		0.889008
S.E. of regression	0.030369	Akaike info criterion		-4.012035
Sum squared resid	0.025824	Schwarz criterion		-3.785292
Log likelihood	71.19858	Hannan-Quinn criter.		-3.935743
Durbin-Watson stat	2.066338			

Source: Researcher's Computation

Table 3 displays the vector autoregressive (VAR) regression result. Table 4 shows the outcome of the lag selection criteria and confirms our estimation of one period lag. The findings show that a one-period lag in GDP has a positive and significant impact on current GDP. We also discovered that both private sector credit (PSC) and GDP log have a negative and significant impact on economic growth. This result shows that when PSC changes by 1%, the economy declines by 1.03 %. The results, on the other hand, show that the broad money supply (M2) has a positive and significant impact on economic growth. According to the findings, a 1% increase in M2 is associated with a 1.2% increase in GDP over the period. Similarly, the results show that inflation has a significant positive impact on economic growth, with a 1% increase in inflation causing a 0.12% increase in GDP. The R-squared value indicates that the independent variables explain approximately 88 percent of the variations in the dependent variable (LogGDP). The Durbin Watson statistic is also close to 2.0, indicating that there are no autocorrelation issues in our model.

VAR Lag Order Selection Criteria						
Endogenous variables: LOGGDP PSC M2 INF						
Exogenous variables: C						
Date: 09/05/19 Time: 22:20						
Included observations: 32						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-306.3708	NA	3123.622	19.39818	19.58139	19.45891
1	-148.9016	265.7294*	0.456194*	10.55635*	11.47243*	10.86000*
2	-141.9093	10.05142	0.843776	11.11933	12.76828	11.66591
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

• **Test of Hypotheses**

Acceptance or rejection of the hypotheses is based on the t-value and P-value. The decision rule shall be to accept alternate hypotheses if the t-value  $\geq 2.000$  and P-value  $\leq 0.05$ . Reject alternate hypotheses if t-value  $< 2.000$  and P-value  $> 0.05$ . Accept null hypotheses if the t-value  $< 2.000$  and P-value  $> 0.05$ . Reject null hypotheses if the t-value  $\geq 2.000$  and P-value  $\leq 0.05$ . We tested the formulated hypothesis using the vector autoregressive (VAR) technique of analysis.

**Decision:** The result showed that M2 has positive and significant impact on economic. We found that the t-statistics of the parameter estimate is 2.574929 and the p-value is 0.0156  $< 0.05$ . Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis that broad money supply has positive and significant impact on economic growth in Nigeria.



## 5. CONCLUSION :

Using the vector autoregressive (VAR) analytical technique, this paper examined the impact of financial deepening on economic growth in Nigeria from 1988 to 2021. Based on the findings, we conclude that, while the two financial deepening variables had opposing effects on economic growth, they both had a significant impact on economic growth in Nigeria over the period.

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