Financial Development Nexus on Economic Growth in Nigeria

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Abstract

Financial system development entails advancement in the magnitude, competence and steadiness of monetary markets alongside manifold benefits for the economy. However, these gains are not visible in the growth process of Nigeria, hence, the examination of financial development's effect on economic growth in Nigeria from 1981 to 2020. Domestic credit to private sector (DCD), broad money supply (BMS), inflation (INF) and trade openness (TOP) were the independent variable while the dependent variable is growth rate in gross domestic product (GDP). Auto-Regressive Distributed Lag (ARDL) model result of the error correction term points to 96% upturn after a year's disequilibrium. The long run result showed a positive and insignificant interconnection involving domestic credit to private sector and growth rate in gross domestic product, but a negative and significant connection, between broad money supply and inflation rate. Conclusion is that, a facilitator for economic growth is financial development; while proper and appropriate monetary policies and strategies that would attract investors is recommended, for increasing capital inflow and investments, and consequently enhancing the level developmental growth in Nigeria.

Keywords: Financial development, Growth, Inflation, Trade openness, Nigeria

Introduction

To develop the financial sector a well set out process of establishment and expansion of markets, mechanisms and institutions is key for growth and investments. The advancement of the financial system entails stability and efficiency of financial market for increased access and size with multiple advantages for the economy (Guru & Yadav, 2019). In the search for development by countries in the African continent, the nations had only experienced sporadic growth but it has not translated to outright development. Nigeria for example could achieve her long-sought development through financial development by optimal capital allocation, better informed decision on investments, effective contract implementation, transaction execution and increased financial access leading to system efficiency, welfare gains and innovation for the economy.

Globally, financial systems have been liberalised including that of Nigeria, thereby putting forward a set of reforms for the efficiency of the financial system - 1986, 2004 and 2009 reforms in Nigeria. Anne and Kevin (2013) noted that sustaining principled guidelines, consolidating market processes and averting monetary crisis are pre-emptive initiatives of reforms to strengthen the system. Economic growth is a rise in internal income level or manufacture by economic drivers for a period of time in a country, and is typified by an expansion in her productive capacity. Investment decisions on savings rate and technological innovations are positively influenced by a well-functioning financial arrangement with beneficial stimulus for economic growth. It is apparent that a nation like Nigeria needs to depend heavily on its financial sector as oil is its mainstay and the agricultural sector is being hounded by archaic methods and lack of innovation. The Nigerian financial system has gone through several reforms aimed at developing the system and improving the savings habit, investment decisions and innovation. Unfortunately, it has not been able to

achieve these objectives; involvement in the growth process of the economy has been minimal for most of the contribution to GDP has been from the petroleum sector.

From the literature reviewed, there exists a conflicting result, thereby resulting to further experiential examination. Studies done by Pinshi and Kabeya (2020), Guru and Yadav (2019), Iheanacho (2016) and Osuji and Chigbu (2012), among others, established a positively significant influence of financial development (herein after referred to as FD) on economic growth, measured by growth rate in GDP. While Moyo et al. (2018), Wang et al. (2015) and Adekunle et al. (2013), affirms a negative consequence of FD on economic growth. This study becomes particularly important in the current context where Nigeria's economy has not been largely influenced by the wave of financial developments. Hence this research, to fill the gap above by making meaningful contribution for policy recommendation and to expand the frontiers of knowledge. The study also makes attempt to identify other possible variables as determinants in Nigeria by modifying then adding to the prevailing studies on financial development in Nigeria. The results showed a positive outcome when FD proxy is domestic credit to private sector representing money demand; whereas a negative outcome when broad money supply, from the supply point of view is used as a proxy. The paper is structured into five sections.

Review of related literature

According to Creane et al. (2004), "financial development is a multifaceted concept, encompassing not only monetary aggregates and interest rates (or rates of return) but also regulation and supervision, degree of competition, financial openness, institutional capacity such as the strength of property rights, and the variety of markets and financial products that constitute a nation's financial structure" Tridip (2011) sees financial development as "producing information about possible investments and allocating capital; monitoring firms and exerting corporate governance; trading, diversification, and management of risk; mobilisation and pooling of savings; and easing the exchange of goods and services." Beck et al. (2010), stated that the task of financial sector cannot be over-emphasized in the expansion of a nation, through the process of capital accumulation and technological advancement which enhances savings rate, investment, capital allocation and foreign capital flows. Akintola et al. (2020) asserts that the chief contribution that modifies economic growth via yield expansion and capital proficiency is financial development.

Empirical review

The dynamic one-step SYS-GMM estimate on BRICS countries by Guru and Yadav (2019) affirms a positively significant relationship amid the independent and dependent variables in those countries, suggesting complementary association between the funding subdivision and stock market advancement in stimulating growth. However, in Brazil, Moyo et al. (2018) observed a negative long run and short run uneven connection involving the two key variables, modelling with the Nonlinear Autoregressive Distributed Lag (NARDL) standard. In China, Wang et al. (2015) running OLS (Ordinary Least Square) regressions obtained a negative outcome on growth, particularly for the tertiary industry, whereas no significant effect for the basic and derived industries. Using Granger's causality context to ascertain the directional correlation linking the two key variables, Pinshi and Kabeya (2020) found a strong, one-way connection in Congo, and in Tanzania, Maganya (2018) applying the vector error correction model, co-integration was observed among the variables.

In Nigeria, Iheanacho (2016) observed a significantly negative relationship connecting the variables in the short-run, whereas it was insignificantly negative in the long run. Ndubuisi (2017) employed multivariate VAR framework and VECM granger causality framework and the result reveals a long run one-path causality linking the variables. Also, Oluwole (2014) by means of OLS (Ordinary Least Square) mode to analyse the link involving money market variables, on growth, established a significant influence. Moreso, Osuji and Chigbu (2012) avails a positive relationship

on the two variables using Error Correction Model (ECM). Arising from the contrasting results and with focus on the demand and supply variables of financial development, this study will expand the frontiers of knowledge by filling the gap in the literature for policy recommendation.

Methodology
The theory underlining this research is the supply leading theory and neoclassical growth theory. The reality of a relationship between financial institution's asset and liability supply and the monetary services prior to its demand is the pitch of supply leading theory. This will ultimately lead to economic growth as it accords efficient distribution of resources to deficit units from surplus units (Patrick, 1996). Capital accumulation nexus with savings decisions brought about by financial development, from the framework of the mixture of labour, capital and technology, as the impetus for a regular economic growth, is the bone of contention of neoclassical growth theory. It stipulates that achieving equilibrium state is by differing the expanse of labour and capital in the function of production as new technology becomes apparent. Capital accumulation and use within an economy is vital for growth hence the measurement of equilibrium and growth is by the production function. The study adopts and modifies the model used by Osuji (2015). The functional form is:

$$GDP = f\,(DCD, BMS, INF\,TOP)$$

Where, GDP is Gross domestic product growth rate; DCD is Domestic Credit to Private Sector as a % of GDP; BMS is Broad Money Supply as a % of GDP; INF is Inflation consumer prices annual % and TOP is Trade openness as a % of GDP.
In econometric formula it is stated as;

$$GDP = \beta_0 + \beta_1 DCD + \beta_2 BMS + \beta_3 INF + \beta_4 TOP + U_t$$

β_1, β_2, β_3, β_4, are intercepts for Financial Development, Inflation, Broad Money Supply, Trade Openness respectively, β_0 is the constant and U_t is the stochastic variable. The likelihood of multi-collinearity between the variables were tested and anchored on Finch et al. (2014) postulation of using centred values which were adopted in this research. Records were obtained from World Development Indicators (WDI) using E-views 10 econometric tool for the period 1981 to 2020 with a peak lag length of three (3) chosen, established on Akaike Information Criterion (AIC). Apriori expectation is (β_1, $\beta_{2\ \&}\ \beta_4 > 0$), ($\beta_3 < 0$).

Data presentation
Unit root tests
Table 1 presents mixture of level and first difference order.
Table 1: Unit root results – using intercept (ADF)

Variables	T-statistic (level)	Critical value (5%)	T-statistic (1st diff.)	Critical value (5%)	Order
GDP	-3.80727	-2.943427	-3.849212	-2.945842	I(0)
DCD	-1.142159	-2.945842	-5.827536	-2.945842	I(1)
BMS	-2.8389	-2.938987	-5.0061	-2.945842	I(1)
INF	-2.975495	-2.938987	-5.746233	-2.941145	I(0)
TOP	-2.451033	-2.938987	-5.471718	-2.945842	I(1)

Source: Author's compilation (2022)

Variance inflation factors (VIF)
The non-appearance of severe multi-collinearity between the variables is shown in Table 2 since all the values are less than ten (10). This establishes the non-linear relationship of the independent variables.

Table 2: VIF

Variable	Coefficient Variance	Uncentred VIF	Centred VIF
GDP(-1)	0.020282	3.188068	1.841297
DCD	0.069991	32.23992	3.853951
BMS	0.083058	86.74171	9.63282
BMS(-1)	0.05548	74.74852	8.102159
INF	0.0016	4.742754	2.105065
INF(-1)	0.003266	9.789544	4.30152
INF(-2)	0.002826	8.446407	3.746647
INF(-3)	0.001952	5.901854	2.575791
TOP	0.004506	25.28321	2.6033
TOP(-1)	0.00621	34.4372	3.94787
TOP(-2)	0.004381	23.78283	2.977564
C	6.761966	30.15286	NA

Source: Author's compilation (2022)

ECM - Error correction regression

Statistically significant and negative result was obtained and presented in Table 3.The coefficient of adjustment is high at 0.96 that is 96% recovery after disequilibrium within a year.

Table 3: ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BMS)	-1.027263	0.217015	-4.733613	0.0001
D(INF)	-0.053975	0.03374	-1.599735	0.1222
D(INF(-1))	0.09879	0.030247	3.266126	0.0032
D(INF(-2))	0.129748	0.037234	3.484652	0.0018
D(TOP)	0.008827	0.054705	0.161365	0.8731
D(TOP(-1))	0.134576	0.055659	2.417852	0.0232
ECM(-1)*	-0.966321	0.121333	-7.964175	0

Source: Author's compilation (2022)

Co-integration/bounds test

Long run nexus was realised with F-statistics of 8.809456 above I(0), I(1) bound on 5% intensity displayed below.

Table 4: Co-integration results

F-Bounds Test		Null		
Statistic	Value	Significance	I(0)	I(1)
F-statistic	8.80946			
K	4			
Actual Sample	37		Finite: n=40	
		10%	2.427	3.395

5%		2.893	4
1%		3.967	5.455

Source: Author's compilation (2022)

Long run analysis

Shown in Table 5 below is the long run impression of the variables. DCD measure is positive but not statistically substantial; denoting a proportion upsurge in DCD raises GDP to the tune of 0.55 in Nigeria and vice vassal. The eigenvalue of BMS is negative denoting it majorly decreases growth in the economy by 0.55 percent. The coefficient of INF and TOP showed a negative and positive relationship respectively and are both significant. This implies that one percent decrease in INF would increase GDP by 0.204 percent and increase in TOP, increases GDP to the tune of 0.13 percent conforming to the a-priori expectations.

Table 5: Long run outline

| Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCD	0.549386	0.273112	2.011581	0.0552
BMS	-0.545089	0.162316	-3.358204	0.0025
INF	-0.20433	0.050334	-4.059512	0.0004
TOP	0.139028	0.052014	2.672911	0.013
C	7.480658	2.823665	2.649272	0.0138

EC = GDP - (0.5494*DCD - 0.5451*BMS - 0.2043*INF + 0.1390*TOP + 7.4807)
Source: Author's compilation (2022)

Stability diagnostics
Recursive CUSUM test
Nix break was observed in the Recursive CUSUM test in figure 1 at 5% significant level.
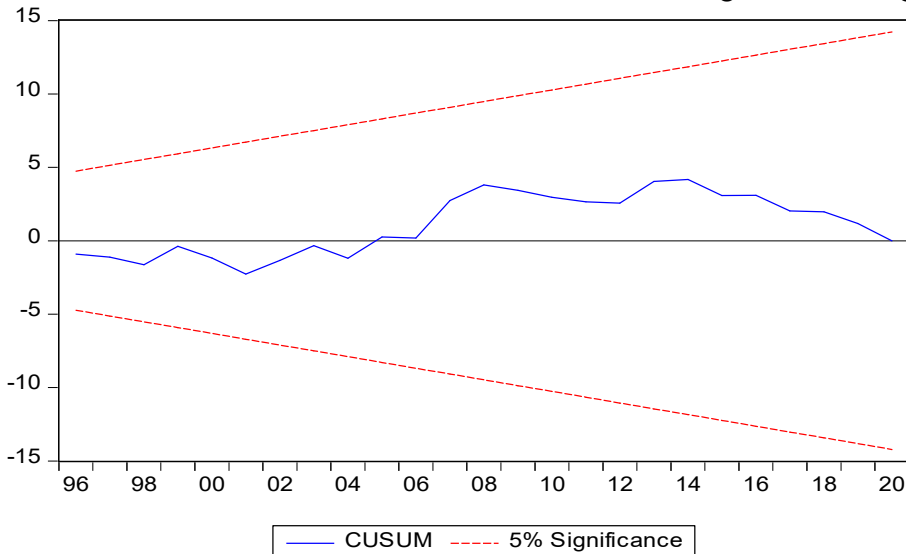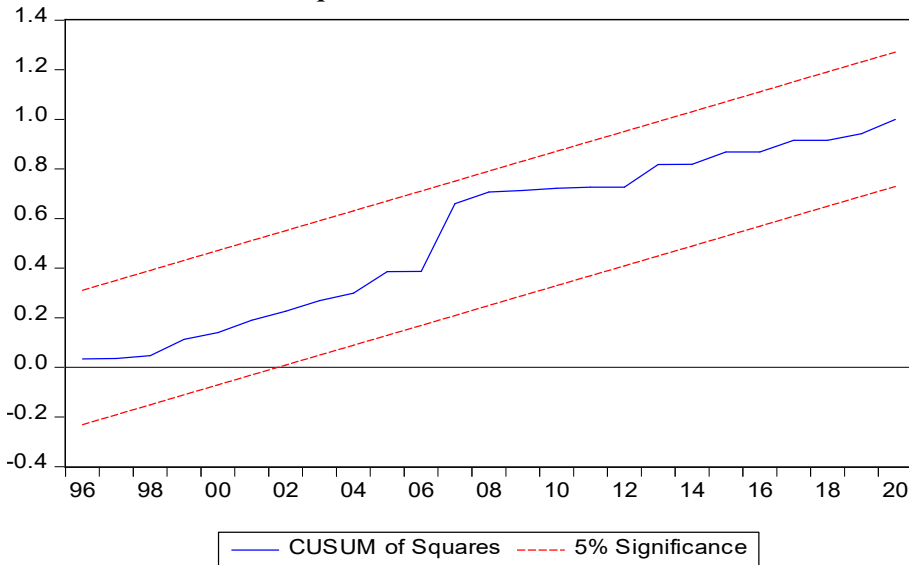

Source: Author's compilation (2022)
Figure 1: Cumulative sum of recursive residual

Recursive CUSUM of squares
No disruption was seen in the Recursive CUSUM of Squares test in figure 2 at 5% level of significance.

Recursive CUSUM of Squares

Source: Author's compilation (2022)

Figure 2: Cumulative sum of squares Recursive Residual

Discussion of findings

The variables examined had varying results. Domestic credit and trade openness exhibited a positive correlation on gross domestic product's growth, while a contrary nexus was obtained for broad money supply and inflation. Conformity with the supply leading and neoclassical growth theories predictions on financial development remained proven, connoting that a rise in financial development remained necessarily worthwhile for economic growth.

Financial development policies leading to expansion and diversification of the sector should be fostered by the Nigerian government to promote overall growth in the country. This is in tandem with the findings of Pinshi and Kabeya (2020), Guru and Yadav (2017), Osuji and Chigbu (2012) but contrary to that of Moyo et al. (2018) and Iheanacho (2016). Meanwhile, when the level of financial development declines, it increases poverty by limiting financial access of the poor in emerging economy like Nigeria, to investments and productivity.

Conclusion and recommendations

Assessing the outcome of the independent variable on the dependent from 1981 to 2020, a positively insignificant long run correlation ensued amid financial development and economic growth in Nigeria from demand point of view (domestic credit). However, it was negative and statistically significant from the supply perspective (broad money supply as proxy). A positive and negative outcome was respectively observed for trade openness and inflation rate on growth. The recommendation is that Nigeria should pay more attention to proper and appropriate monetary policies and strategies that would attract investors, thereby increase capital inflow and investments, and consequently enhance the level economic growth and development. An appropriate threshold for money supply whereby it is efficient and effective should be maintained, to enhance growth. Trade promoting policies ought to be put in place by the government's fiscal and monetary policy team. Avenues for feedback from the private sectors should be provided by the government for efficient monitoring of governments interventions and improvement for the private sectors as engine of growth.

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