
Financial Development and Economic Performance in Nigeria: Evidence from Sectoral Analysis

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Abstract

This paper examined the effect of financial development variables on sectoral output performance in Nigeria. The study adopted time series data that were obtained from the Statistical Bulletin of the Central Bank of Nigeria (CBN, 2020) and World Development Indicators (WDIs, 2020) for a period of 1981 – 2020. Autoregressive distributed lag (ARDL) and Fully Modified Ordinary Least Squares (FMOLS) techniques were adopted for short run and long run analyses. The results show that domestic credit to the private sector as a ratio of GDP has positive effect on Agricultural sector, but records negative effects on manufacturing sector, whereas, money supply as a ratio of GDP exerts negative effects on all the sectors in the short run. In the long run, money supply as a ratio of GDP also exerts negative effects on all the sectors save for services sector on which it has positive effects, while domestic credit as a ratio of GDP has positive long effects on all the sectors. The study identifies agricultural and services sectors as growth catalyzing sectors in relation to the influence of financial development. It is therefore recommended that policy makers take serious interest in the sectors, while further examining the challenges of failing financial development strategies on the manufacturing sector.

Keywords: Financial Development, Sectoral Outputs, Economic Growth

1. Introduction

Financial development is a term that has been variously considered in the growth literature. It has been identified in the economics and finance literature as one of the catalysts that enable unprecedented growth rate for an economy (Levine, 2004; Fitzgerald, 2008; Sennuga, Adenaike, Samson, Adedayo 2021; Udoh, Jack, Prince, Ekeowa, Ndubuaku & Samuel, 2021). The evidence of how it contributes to the economies of the developed nations is why the developing and emerging economies like Nigeria has over time initiated a lot of policies that will not only create liquidity in the economy but also provide means for the liquidity to positively impact Nigeria's economy. As observed, one of the numerous evidences of the policy initiation was the commercial bank's capitalization and recapitalization of 2005 and beyond as also extended to insurance companies, primary mortgage institutions (PMIs), among others. Furthermore, the role of financial development in spurring economic growth has also prompted the Central Bank of Nigeria (CBN) to provide ease of cash flow and monetary movement within the economic as evidenced by more than a million Point of Sale (POS) outlets

across Nigeria as well as licensing numerous credit agents to provide soft loans for the Nigerian populace. Unfortunately, in spite of the numerous efforts by government to stimulate economic growth through financial development strategies, the economy of Nigeria remains ailing with sluggish and near zero growth rate (CBN Statistical Bulletin, 2021).

Notably, the issues bothering on stimulating economic performance in the direction of desired growth level are a common phenomenon in all economies, both in the advanced and the developing countries alike. Consequently, efforts have been made at various levels of research to provide policy formulation guidelines to policy makers in confronting the issues bothering on economic performance. In doing this, researchers have tinkered with and queried economic theories, while numerous innovative exercises have repeatedly been carried out at the same time. For instance, Schumpeter 1911; Goldsmith, 1969; McKinnon. 1973; Shaw, 1973; King & Levine 1993; Merton & Bodie 1995; Vipin, Pokhriyal, & Arvind, 2015, Okafor, Onwumerey & Chijindu, 2016; Nwakobi, Oleka & Ananwude, 2019; Samuel-Hope et al, 2020; Udoh et al, 2021 are some of the studies that have examined the relation between financial development and economic performance in advanced countries, developing countries, and in Nigeria in particular. These studies have placed direct emphasis on the role that financial liquidity, market capitalization and financial intermediaries play in economic stimulation. All these studies have focused on the nexus of financial development as a tool for achieving economic growth only at the aggregate level. Interestingly, they have generated varying outcomes on the role of financial development in stimulating economic growth.

However, few studies have examined the relation between financial development and sectoral performance in Nigeria. For instance, Mesagan, Olunkwa, and Yusuf (2018) observed the relationship between financial development and the performance of the manufacturing sector in Nigeria. The results demonstrate positive but insignificant relation with manufacturing output. However, it furthered reveal that financial development negatively affected manufacturing value added in the period of the study. Similarly, Raifu and Aminu (2019) examined the nexus of financial development and agricultural sector performance in Nigeria. The study found that although financial development has positive impact on agricultural sector activities, such impact was wane by institutional factors. As observed from the literature, much work is yet to be done regarding the empirical relation of financial development to sectoral performance in Nigeria. This portends serious challenge for policy makers. The remainder of this paper is structured as follows: section 2, literature review; section 3, methodology; section 4; estimation techniques; section 5, presentation of result and discussion of findings; and section 6, conclusion and policy recommendation.

2. Literature Review

This section of the paper discusses the previous works that have been done on the nexus of financial development and economic output, while specifically discussing the relevant theoretical construct for the study alongside the empirical review.

2.1 Theoretical Review

There are a lot of theoretical expositions on the relation of financial development with economic growth. Some studies have considered the classical theory (Smith, Ricardo, Mill),

the finance-led growth hypothesis [Schumpeter (1911), Goldsmith (1969), Shaw (1973), Mackinnon (1973), Adeyeye, Fapetu, Aluko and Migiroy (2015); growth leading hypothesis [Robinson (1952), Singh (1999), Echekeba and Ubesie (2019)]; stages of development hypothesis (Patrick, 1966), and trade theory of capital structure [Modigliani and Miller (1958), Kraus and Litzenberger (1973), Myers (1984) and Frank and Goyal (2005)]. In this study, the neoclassical theory has been chosen as the appropriate theoretical underpinning for analysing the effect of financial development on economic output. The neoclassical growth theory was developed in the 1950s, and popularized by the works of Solow (1953), Romer (1982), Mankiw (2000), among others. The theory rests on the principles of free market system where there is no form of government's intervention. The theorists asserts that a nation will grow rapidly if such nation places emphasis on saving, which will drive investment, while investment will in turn drive capital accumulation and technical innovation, which will in turn drive productivity, hence, economic growth. This theory has been popularly adopted and adapted by scholars in the evaluation of the relation between financial development and economic growth. For instance, Atje and Jovanovic (1993) adopted the growth theory model of Mankiw-Romer-Weil (1992) and further augment it with stock market variable in a cross- country study. The study establishes the plausibility of stock market leading to economic growth.

Similarly, Cooray (2010) further extends the Mankiw-Romer-Weil (1992) model by decomposing capital stock into two segments, stock market capital and non-stock market capital. Durusu-Ciftci, et al (2016) also toed the path of Cooray (2010) and find that stock market had higher level of contribution to economic growth while credit markets have a greater level of contribution. The question of how financial development enhances economic performance, thereby causing growth has been discussed and digested in several studies. These studies have emphasized the relevance of the neoclassical growth theory in explaining the theoretical and empirical connection between financial development and economic growth. Kose, Prasad, Rogoff and Wei (2006) and Henry (2006) specifically grouped the channel of how the development of the financial sector can improve economic performance into two ways, the direct and the indirect channels.

2.2 Empirical Review

2.2.1 Evidence from Developed Countries

Whether or not there is relation between variables of financial development and economic growth has been a major debate among scholars in developed countries. Beginning with the study by Schumpeter (1911) on the United States of America which established a positive impact of financial development on economic performance, several studies on same have been conducted by other scholars, who have affirmed or refuted the outcome of Schumpeter. Goldsmith (1969), Shaw

(1973), Cheng (1980) and Moore (1986) are some of the old studies, who supported the view established by the pioneer study of Schumpeter (1911). However, not all studies agree with the outcome of Schumpeter (1911) and those of other scholars, who align with him. Studies by Robinson (1952) began a controversial study that first negates the findings of Schumpeter and other scholars, who support the finance-led growth hypothesis. The foregoing studies laid the

theoretical base for examining the nexus of financial development with economic growth. As such, no particular empirical juxtaposition was made in the literature until King and Levine (1993) pioneered empirical verification of the earlier studies (Pilhyun Kim, 2006; Estrada, et al, 2010). Specifically, King and Levine (1993) brought a twist to the empirical investigation of the nexus of financial development and economic performance by considering financial development in terms of liquid liabilities, while three macroeconomic variables (real GDP growth per capita, real capital stock growth per capita, and total productivity growth) were used to proxy economic growth in a cross-country study involving 77 countries. The study finds a statistically significant positive relationship between financial development and economic growth variables. Similar outcomes were established in studies by Levine and Zervos (1998). A twist was brought in by Beck and Levine (2004), who after controlling for simultaneity and omitted variable biases, adopted Generalized Method of Moments (GMM) in a cross-country study that adopted stock markets and banks as measures of financial development. The study finds that measures of financial development are significantly and jointly impacted economic growth. Conversely, some earlier studies on the relationship of financial development with economic growth could not establish a positive connection between the variables. Some of these studies are: Alesina, Gilli and Milesi-Ferretti (1994), Gilli and Milesi-Ferretti (1995), Quinn (1997), Rodrick (1998), Bailiu (2000), McKenzie, (2001), Reisen and Soto (2001) McLean and Shrestha (2002), Lee and Jayadev (2005), Schularick and Steger (2006, 2007). To establish the inconclusiveness of the studies in developed countries, Mirdala (2011) conducted a similar study on ten European countries and find mixed outcomes. This prompted the need to examine how both variables have interacted over time in developing countries.

2.2.2 Evidence from Developing Countries

As observed with the developed countries, the developing and emerging economies have also witnessed several studies on the nexus of financial development and economic growth. Notably, the developing countries in Latin America, Asia, and Africa have demonstrated different experiences on the relation of financial development with economic performance. The mixed outcomes established so far continues to be the motivation behind other studies, who continually make attempts to reexamine the relationship using different innovations and data combination. For instance, Adua, Marbuah & Mensah (2013) investigate the long-run growth effects of financial development on economic growth. They argue that the growth effect of financial development is responsive to the choice of proxy. The study indicates that the ratio of credit to the private sector to GDP and total domestic credit contribute to growth, while the broad money supply to GDP ratio does not promote growth. The indexes created from principal component analysis indexes validated the sensitivity of the effect to the choice of proxy. The findings here suggest that regardless of the financial development outcome, economic growth is a function of the indicator used as proxy for financial development.

In more recent studies on developing countries, there is yet no consensus on study outcomes on the relation of financial development with economic growth. Bakang (2015), Viping and Arvind (2015) and Herman and Klemn (2019) find that financial development variables spur economic growth in the case of Kenya, India, and Mexico. Furthermore, Ezeibekwe (2020) conducted a panel study on the nexus of financial development and economic growth in 69

developing countries across Asia, Latin America, the Caribbean, East & South Asia, Middle East and North Africa, and Sub-Sahara Africa. The study, among other things considered, national income, perception of corruption, trade openness, indices of political stability, religion, territorial access to the sea and political stability indices. The study shows among other outcomes that corruption perception plays a critical role in the level of financial development, and its ability to impact economic growth. Alawadhi, Alshamali and Alshamali (2021) brought a twist into the study by aligning with World Bank's (2020) indicators of financial development, which are: access to finance, depth of finance, efficiency of finance, and financial stability. They find a positive and significant relationship between the financial development and economic growth in the countries. The study further concludes that individual's access to financial institution in the countries could serve as growth catalysts. With the level of inconclusiveness in related studies both in developed and developing countries, the need to examine the same trend in the literature on Nigeria cannot be overstated. This is the focus of discussion in the next subsection.

2.2.3 Evidence from Nigeria

Many studies have been conducted on financial sector development in Nigeria and how it has impacted economic growth. Notably, Nigeria's first attempt at making financial development was by the introduction of the Structural Adjustment Programme (SAP). Since the SAP was introduced, enormous research works have been conducted on gauging its effect on economic growth. As with the advanced and other developing countries, mixed outcomes have been obtained for Nigeria. In a study by Otto, Ekine and Ukpere (2012), Ordinary Least Squares (OLS) technique was adopted to analyse an annual data for the period of 1985-2008. The study establishes a positive relationship between financial development and economic growth in Nigeria. Olawumi, Lateef and Oladeji (2017) brought innovative twist to the study by examining the effect of financial development on the performance of commercial banks in Nigeria. The study records a strong positive relationship between financial development variables and the profitability of commercial banks in Nigeria. In another innovative study, Ilemona and Ome (2021) examined the nexus of financial development on inclusive growth in Nigeria. Using Autoregressive Distributed Lag (ARDL), they find that financial development makes positive contribution to economic growth. However, a counter outcome was established in the results of Samuel-Hope, Ehimare & Osuma (2020), where a financial development variable was found to exert negative effect on economic growth. Similar result was obtained by Giasor (2020) and Sennuga et al (2021). In these studies, rather than exerting positive impact on growth, variables of financial development were found to be counterproductive. This leaves much to desire in the relationship between the variables.

3. Methodology

The objective of this paper is to examine the effect of financial development on the disaggregated sectors of the Nigerian economy. For the purpose of this study, the sectors that were considered are: Agricultural Sector, Manufacturing Sector, and Services Sector. These sectors were classified by the CBN, 2021 as the major sectors that incorporates other subsectors in them. Time series data for the period of 1981-2020 were obtained from the Statistical Bulletin of the Central Bank of Nigeria (2021) and the World Development Indicators, WDIs

(2021). The Autoregressive Distributed Lag (ARDL) and Fully Modified Ordinary Least Squares (FMOLS) techniques were adopted for the short run and long run analysis, respectively. The ARDL was adopted for the short run analysis because it is less sensitive to variable's order of integration; hence, it accommodates

$I(0)$, $I(1)$ or both. The FMOLS was chosen for examining the long run relationship because it corrects for serial correlation problem of the OLS and further solves the endogeneity problem. Furthermore, the paper also recognizes the role of inflation in the interactions of economic variables; inflation will be added as a control variable.

3.1 Model Specification

In agreement with the existing studies on the relationship between financial development and the performance of the disaggregated sectors, the Cobb-Douglas function of the relationship between the two variables is specified as:

$$Y = f(\text{Capital formation, Labour, Financial development}) \quad (1)$$

In equation 1, the traditional neoclassical production function is augmented with financial development variable, hence, the financial development is included as the last variable, though, it is important to the study. It is assumed that labour force is constant as it is a natural process that depends on a number factors such as, mortality rate, birth rate, death rate, immigration, etc. Holding labour force is constant in the Nigerian economy, equation (1) will be re-specified as:

$$Y = f(\text{Capital formation, Financial development}) \quad (2)$$

The structural form of equation (2) will be specified as:

$$Y = f(K^\alpha, FD^{1-\alpha}) \quad (3)$$

where Y represents the economic output, K is the stock of capital, FD represents the variables of financial development, which are: the ratio of Money Supply to GDP ($M2/GDP$), the ratio of Domestic Credit to Private Sector by Bank to GDP ($DCPSbB/GDP$).

Equation (2) in sectoral form is specified as:

$$YA = f(K, M3GDP, DCGDP) \quad (4)$$

$$YM = f(K, M3GDP, DCGDP) \quad (5)$$

$$YS = f(K, M3GDP, DCGDP) \quad (6)$$

where YA , YM , and YS represent Agricultural output, Manufacturing output, and Services Output, respectively.

The linear relationship among sectoral outputs and the variables of financial development (fd) and capital stock can be expressed in econometric form as:

$$\ln Y_{it} = \alpha_0 + \alpha_1 \ln K_{it} + \alpha_2 \ln M2GDP_{it} + \alpha_3 \ln DCGDP_{it} + \varepsilon_{it} \quad (7)$$

where:

$\ln Y_{it}$ is the log of the vectors of sectoral output; it represents the dependent variables.

$\ln K_{it}$ is the log of capital stock,

$\ln M2GDP_{it}$ is the log of the ratio of Money Supply to GDP, and

$\ln DCGDP_{it}$ is the log of the ratio of Domestic Credit to GDP, represent the independent variables.

ε_{it} is the idiosyncratic error term that is independently and identically distributed $\varepsilon_t \sim (0, 1)$

α_o is the intercept term

$\alpha_1, \alpha_2,$ and α_3 are the unknown coefficients terms of the explanatory variables.

Examination of the Effect of Financial Development on the Disaggregated Sectors Performance in the Nigerian Economy

ARDL Short Run model

$$\begin{aligned} \Delta \ln AGR_t = & \theta_o + \sum_{i=0}^q \theta_1 \Delta \ln AGR_{t-i} + \sum_{i=0}^q \theta_2 \Delta \ln K_{t-i} + \sum_{i=0}^q \theta_3 \Delta \ln M3GDP_{t-i} \\ & + \sum_{i=0}^q \theta_4 \Delta \ln DCGDP_{t-i} + \sum_{i=0}^q \theta_5 \Delta \ln INF_{t-i} + ECT_{t-1} + \mu_{1t} \end{aligned} \quad (8)$$

$$\begin{aligned} \Delta \ln MAN_t = & \gamma_o + \sum_{i=0}^q \gamma_1 \Delta \ln MAN_{t-i} + \sum_{i=0}^q \gamma_2 \Delta \ln K_{t-i} + \sum_{i=0}^q \gamma_3 \Delta \ln M3GDP_{t-i} \\ & + \sum_{i=0}^q \gamma_4 \Delta \ln DCGDP_{t-i} + \sum_{i=0}^q \gamma_5 \Delta \ln INF_{t-i} + ECT_{t-1} + \mu_{2t} \end{aligned} \quad (9)$$

$$\begin{aligned} \Delta \ln SER_t = & \eta_o + \sum_{i=0}^q \eta_1 \Delta \ln SER_{t-i} + \sum_{i=0}^q \eta_2 \Delta \ln K_{t-i} + \sum_{i=0}^q \eta_3 \Delta \ln M3GDP_{t-i} \\ & + \sum_{i=0}^q \eta_4 \Delta \ln DCGDP_{t-i} + \sum_{i=0}^q \eta_5 \Delta \ln INF_{t-i} + ECT_{t-1} + \mu_{3t} \end{aligned} \quad (10)$$

Fully Modified Ordinary Least Squares (FMOLS) long run model

4. Estimation Techniques

4.1 Unit Root Test

Adoption of time series data without proper check of the data quality may lead to improper regression outcomes. For example, when a non-stationary data is regressed on another non-stationary data, the outcome is always spurious. Owing to this realization, the study conducted

stationarity test using the Augmented Dickey-Fuller (ADF) and Philips Peron (PP) unit root test approaches.

Unit Root Test	Augmented Dickey- Fuller			Philips – Peron		
Sector/Variables	t-stat	Prob.	Remark	Adj. t-stat	Prob.	Remark
	At Level	At First Diff		At Level	At First Diff	
LNAGR	-2.055792 (0.2630)	-3.991906* (0.0037)	I(1)	-2.055792 (0.2630)	-4.042265* (0.0032)	I(1)
LNMAN	-2.055792 (0.2630)	-4.745687* (0.0004)	I(1)	-0.617164 (0.8552)	-4.644860* (0.0006)	I(1)
LNSER	0.781327 (0.9924)	- 2.807935*** (0.0666)	I(1)	0.781327 (0.9924)	- 2.807935*** (0.0666)	I(1)
LNK	0.437473 (0.9821)	-3.886197* (0.0049)	I(1)	0.135944 (0.9645)	-3.839230* (0.0056)	I(1)
DCGDP	-1.037334 (0.7303)	-5.764483* (0.0000)	I(1)	-0.914691 (0.7730)	-6.582219* (0.0000)	I(1)
M3GDP	-0.715240 (0.8311)	-5.715689* (0.0000)	I(1)	-0.430924 (0.8973)	-5.951158* (0.0000)	I(1)
INF	- 2.915636 (0.0529)	- 5.672638* (0.0000)	I(0)	- 2.784994 (0.9699)	-9.669308* (0.0000)	I(0)

Mackinnon (1996) one-sided p-values.

Note: ADF, PP, and *, **, and *** represent 1%, 5%, and 10% level of significance

All variables are integrated of order 1, that is, they are I(1) variables except inflation, which is integrated of order zero, that is, I(0) at 1%, 5%, and 10% level of significance, except construction output, which is I(0) at 1% level of significance.

Source: Authors' Computation using EViews 10, 2022

4.2 Cointegration Test

Investigating the relationship between economic variables is usually not necessary, where there is no existence of long run relationship between them. If there is existence of long run relationship or equilibrium, the study will be more useful in making forecast about the future equilibrium between the variables. The study adopted ARDL unrestricted error correction mechanism (ECM) model to test for long run cointegration. Cointegration results for all the sectors show a significant long run relationship among the dependent and independent variables with F-static values of 3.401471, 3.902263, and 15.40063 for agriculture,

manufacturing and services sectors, respectively, while the F-Bounds test critical values at 5% level of significance were: 2.56 to 3.49.

5. Presentation of Results and Discussion of Findings

In a bid to analyse the effect of financial development variables on disaggregated sectors in the Nigerian economy, both the short run and long run analyses were conducted, which are presented in this section.

Table 5.1, ARDL Error Correction Mechanism model result

Dependent Variable: Agricultural Output							
Ind. Variable	Coefficient	Standard Error	t-Statistic	Prob.	R²	Adj. R²	DW
LNAGR	0.30692**	0.11913	2.576367	0.0172	0.757468	0.685607	1.8058
DCGDP	0.02249**	0.01078	2.08634	0.0488			
M3GDP	-0.05547***	0.014276	-3.885155	0.0008			
CointEq(-1)*	-0.15989***	0.024782	-6.451829	0.0000			
Dependent Variable: Manufacturing							
DCGDP	-0.008859	0.009874	-0.897272	0.3778	0.590982	0.525011	1.9532
DCGDP(-1)	-0.019809	0.010549	-1.877708	0.0717			
CointEq(-1)*	-0.412401	0.078053	-5.283578	0.0000			
Dependent Variable: Services Output							
M3GDP	-0.020769	0.005751	-3.611338	0.0011	0.682232	0.643715	1.5679
CointEq(-1)*	-0.059824	0.008321	-7.189483	0.0000			

*, **, and *** represent 10%, 5%, and 1% level of significance. Note: DW is Durbin Watson

Source: Authors' Computation using EViews10, 2022

Table 5.1 depicts different types of effects of financial development variables on various sectors of the Nigerian economy. Agricultural sector has been shown to be influenced differently by the financial development variables. The ratio of domestic credit to the private sector to the GDP (DCGDP) shows a positively significant effect on agricultural output. Specifically, a unit increase in domestic credit to the private sector as a ratio of GDP will bring about 0.02 percent ($t = 2.086$, $p < 0.05$) increase in agricultural output. Although, the effect is positive, its impact is very low. Conversely, a unit increase in money supply as a ratio of GDP will bring about 0.055 percent ($t = -3.885$, $p < 0.05$) reduction in agricultural output. The Error Correction Term (ECT) (-0.15989, $p < 0.01$), which measure the rate of conversion to long run equilibrium is negative but statistically significant. It shows that the disequilibrium in the short run can be adjusted at speed of 15 percent per annum.

In the manufacturing sector, the results show that the domestic credit as a ratio of GDP has negative effect on the sector even though the effect is only significant at 10 percent level of significance in the one lagged period. Similar, to the agricultural sector, the ECT coefficient for the manufacturing sector is negative and statistically significant (-0.4124, $p < 0.01$).

In the services sector, an outcome similar to the manufacturing sector was established save for the fact that it is significant at the current period. In effect, a unit increase in money supply as a ratio of GDP will bring about 0.02 percent ($t = -7.18948$, $p < 0.01$) reduction in services output.

All the models satisfied the test of goodness of fit with appreciable Adjusted R² value of 0.75, 0.60, and

0.68 for agricultural, manufacturing and services sectors respectively. This shows that the variation experienced by each of the sectors is explained up to the percentages of the goodness of fit test. Similarly, there is no evidence of the presence of serial correlation in the model as depicted by the results of the Durbin Watson tests as shown on Table 5.1.

Table 5.2, FMOLS Long run results

Dependent Variable: Agricultural Output						
Ind. Variable	Coefficient	Standard Error	t-Statistic	Prob.	R²	Adj. R²
DCGDP	0.049132*	0.027880	1.762242	0.0873	0.988937	0.987597
M3GDP	-0.061299	0.030270	-2.025047	0.0510		
Dependent Variable: Manufacturing						
DCGDP	0.026782	0.027677	0.967666	0.3403	0.992526	0.991620
M3GDP	-0.002485	0.030049	0.082685	0.9346		
Dependent Variable: Services Output						
DCGDP	0.029537**	0.014668	2.013723	0.0523	0.993145	0.992315
M3GDP	0.037943**	0.015925	2.382607	0.0231		

*, **, and *** represent 10%, 5%, and 1% level of significance.

Source: Authors' Computation using EViews10, 2022

From Table 5.2, a mixture of effects was also noticed on the relation between financial development variables and sectoral outputs in Nigeria in the long run. Notably, the nature of effects of financial development variables on agricultural outputs in the short run was also observed for the long run relation save that the effect, though positive, is not significant. However, the ratio of money supply as a share of GDP demonstrates a significant negative long run effect on agricultural outputs. Specifically, a unit increase in money supply as a ratio of GDP will bring about 0.0613 percent ($t = -2.0251$, $p < 0.05$) reduction in agricultural output. Similar outcomes were obtained for the manufacturing sector output save that the effects of both variables of financial development are not statistically significant. However, services sector has a ray of hope as both financial development variables have significantly positive effects on the sector's output. Although the margin of impact will be small in the long run, the results show that a unit increase in both financial development variables will bring about 0.03 percent ($t = 2.0137$, $p < 0.05$) and 0.04 percent ($t = 2.3826$, $p < 0.05$) increase in sector's output by DCGDP and M3GDP, respectively.

5.3 Diagnostic Tests

As a culture in time series regression, the post-regression diagnostic tests were conducted to ascertain the level of reliance on the regression outcomes. As such, tests were conducted on the structural stability of the model and on the assumptions underlying regression by the Ordinary Least Squares methods. Serial Lagrange Multiplier test for autocorrelation, Breusch-Pagan-Godfrey Heteroskedasticity, as well as Jarque- Bera normality tests were conducted as shown in table 5.3. All the diagnostic test outcomes were favourable.

Diagnostic Tests

Variable/Diagnostic Test	Serial Correlation	Jarque-Bera	ARCH
	LM Test	Normality Test	Heteroskedasticity Test
Agriculture	0.4336 (0.5147)	4.9020 (0.0863)	0.1446 (0.7062)
Manufacturing	1.4076 (0.2642)	1.4302 (0.4891)	1.2791 (0.2921)
Services	2.0112 (0.1534)	1.5068(0.4708)	1.0963 (0.3938)

Notes:

- I. The first set of values in each row and column, outside the parenthesis are the F-Statistic values
- II. The set of values within the parenthesis are the probability value

Source: Authors' Computation using EViews 10, 2022

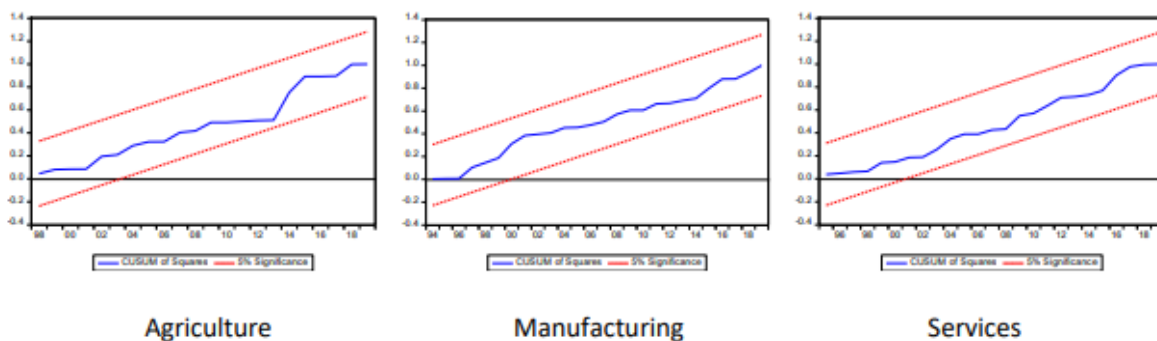


Figure 5.1 Model Stability graph: Cumulative Sum of Squares (CUSUM)

6. Conclusion and Recommendation

The effect of financial development variables on sectoral outputs in Nigeria have been examined in this study. Although, financial development has been identified as a catalyst for enhancing economic performance in Nigeria, it has demonstrated mixed outcomes for sectoral outputs in Nigeria. The agricultural and services sectors have been identified as growth catalyzing sectors in relation to future effect of financial development strategies. It is therefore recommended that policy makers take serious interest in the sectors, while examining the challenges of failing financial development variables on the manufacturing sector.

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