

# **DOES MICROFINANCE BANK CREDIT INFLUENCE OUTPUT PERFORMANCE IN NIGERIA? A NEW EMPIRICAL EVIDENCE FROM THE DOLS APPROACH**

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## **Abstract**

Developing nations have experienced a variety of economic challenges that have limited their ability to develop and thrive. Since the pandemic in 2020, Nigeria's economic growth has been trending downhill, creating severe economic and social problems. In light of this ugly trend, this study critically evaluates the effect of microfinance bank credit on output performance in Nigeria. This study utilized secondary data collected from the Central Bank of Nigeria statistical bulletin. It deployed the Dynamic Ordinary Least Square (DOLS) Estimation techniques to explore the effects of microfinance bank credit on output performance in Nigeria. The findings show that microfinance bank loans and advances have a positive and significant long-run effect on Nigeria's economic growth. Therefore, the study recommends that microfinance institutions must be adequately harnessed and supported to attain their maximum potential. This involves appropriately regulating microfinance banks and reviewing the Microfinance Policy, Regulatory, and Supervisory Framework (MPRSF) to increase public trust in microfinance institutions. Additionally, microfinance banks should be required to provide SMEs with much-needed loans with minimal or reasonable collateral.

**Keywords:** Microfinance Bank Credit, Small and medium-scale enterprise (SME), Economic growth, Financial Inclusion

**JEL classification:** O16, G21, C22

## 1. INTRODUCTION

The significance of microfinance institutions as a critical enabler of financial inclusion, which increases the accessibility and availability of financial services to micro, small, and medium-scale enterprises (MSMEs) and underserved communities cannot be overemphasized. According to Olufisayo (2023), small and medium-sized businesses are given access to affordable loans through microfinance, allowing them to grow, create jobs, and promote economic progress. Additionally, they educate small businesses on how to handle their finances and grow their businesses. Microfinance plays an essential role in developing countries by empowering women entrepreneurs and enabling the eradication of poverty. Koch (2019), referenced in Orji et al. (2023), hinted that MSMEs in developing countries require access to finance to take advantage of investment and growth opportunities, create jobs, and contribute to economic growth and poverty eradication.

The inception of microfinance institutions in Nigeria traces back to 2005, during the tenure of President Obasanjo's administration, which recognized the critical role of providing financial support to small enterprises. This era of policy reform ushered in the transition from formal community banks to microfinance banks by establishing the Microfinance Policy, Regulatory, and Supervisory Framework (MPRSF). These community banks, now microfinance institutions, were initially self-sufficient, community-owned, and governed. These communities include a variety of groups, including farmer's groups, town unions, and social clubs, among others, that came together to enhance economic development at the local level and encourage the community's practice of saving (Apre, 2016).

The Microfinance Policy, Regulatory, and Supervisory Framework (MPRSF) was created to establish regulations and standards for managing microfinance institutions in Nigeria. In addition to protecting customers who bank with microfinance institutions and ensuring their survival, the MPRSF also offers a supportive environment for these organizations. The fundamental goal of the microfinance policy reform, which had a lofty target, was to impact Nigeria's economic well-being significantly. Its goals were to create jobs to combat the rising unemployment rate, lessen poverty, and dramatically increase the amount of credit delivered to the economy by the microfinance industry. According to Babajide, Taiwo, and Adetiloye (2017), the policy's specific goal was to increase the share of microcredit in the economy from 0.9% to 20% by 2020.

Furthermore, by encouraging microcredit financing at the local and state government levels by 2015, the policy offers a way to further boost government involvement in microfinance. Additionally, the policy aims to create an inclusive society by closing the gender pay gap by increasing women's access to financial services by 5% annually. Also, the policy goal was to improve cooperation between banks, development finance organizations, specialized finance companies, and microfinance banks by 10% (Iganiga, 2008; CBN-MPRS, 2005).

In 2011, the Central Bank of Nigeria (CBN) reformed the Microfinance Policy Regulatory and Supervisory Framework (MPRSF), considering the

performance of the 2005 version and the then state of microfinance institutions. The objective of the updated version, among others, is to expand and ensure balanced growth in the microfinance sector and promote innovation by drawing ideas from international best practices in microfinance. Nevertheless, Babajide, Taiwo, and Adetiloye (2017) hinted that despite these efforts to grow the microfinance sector, the sector still needs to contribute to developing the Nigerian economy.

Meanwhile, in other developing countries, microfinance institutions have successfully provided financial services to small businesses and low-income households. The World Bank noted that microfinance institutions in developing countries have successfully provided financial services to over 200 million individuals with a loan portfolio of over \$100 billion. Microfinance institutions have provided access to financial services to over 40 million individuals with a loan portfolio of over \$10 billion. However, a significant proportion of small businesses in Nigeria lack access to finance, enabling them to expand output, thereby contributing to the country's gross domestic product (GDP) (Olufisayo, 2023). The Africa Development Bank (2023) noted that Nigeria's real GDP growth fell to 3.3% in 2022 from 3.6% in 2021. In light of this ugly trend, this study examines the impact of microfinance bank credit on output performance in Nigeria. The rest of the paper is structured as follows; section 2 focuses on the review of empirical literature, while section 3 dwells on the methodology. The results are presented and discussed in section 4, while section 5 concludes the study and makes some vital policy recommendations.

## **2. LITERATURE REVIEW**

### **A. MICROFINANCE BANK CREDIT THEORIES**

#### **2.1 VULNERABLE GROUP THEORY OF FINANCIAL INCLUSION**

According to this view, the vulnerable members of society (people with low incomes, people living in rural regions, young people, women, and the elderly) should be the focus of any nation's financial inclusion programs. These groups bear the brunt of economic hardship and crises. Since financial crises regularly affect them, including vulnerable people in the official financial system is essential. According to the theory's conclusion, efforts to increase financial inclusion should concentrate on those members of the population who are identified as vulnerable (Ozil, 2020).

#### **2.2 CLASSIC MICROFINANCE THEORY OF CHANGE**

According to Dunford (2012), the Classic Microfinance Theory of Change argues that entrepreneurs use microfinance services to obtain capital before investing it in micro businesses. Third, they increase household income and consumption, hence lowering poverty. Second, they manage these microenterprises to offer a suitable return on investment. This view is consistent with what economists studying development think. They concurred that expanding financial access is essential for reducing income disparity, raising household income, and creating more jobs for the world's poor and extremely poor. According to Al-Mamum, Abdul Wahab, and

Malarvizhi (2012), referenced by Orji et al (2023), access to credit enhances clients' and their families' capacity to increase income-generating and employment possibilities, leading to higher household income and asset value.

### **2.3 SOCIAL CAPITAL THEORY IN MICROFINANCE**

This theory is an essential concept in microfinance, which focuses on social networks, trust, and community ties in aiding access to financial services in communities and promoting the effectiveness of microfinance institution intervention. This theory recognizes the importance of social relationships as a fundamental element in building trust for effective transactions and outcomes, especially in contexts where formal financial service is limited. Social capital theory highlights that individuals are embedded in social networks, which include family, friends, neighbors, and community groups. In microfinance, these networks are important channels for information sharing, financial assistance, and mutual support. Borrower groups in microfinance, often formed based on pre-existing social ties, are a clear example of leveraging social networks.

### **2.4 GROUP LENDING MODEL**

According to Schurmann and Johnston (2009), the group-lending model of microcredit is a development intervention in which small-scale credit for income-generation activities is provided to individuals who do not have material collateral. This lending model is designed to rectify the issue that arises from lending to low-income individuals and those who do not possess tangible collateral. People with identical economic or geographic backgrounds are often grouped in small groups of five to 10 people in group lending. One of the significant characteristics of this group is joint liability, where members share the responsibility of repaying a loan taken by an individual. If one member defaults on loan repayment, other group members are responsible for repaying that loan.

## **B. OUTPUT THEORIES**

### **2.5 COBB-DOUGLAS PRODUCTION FUNCTION**

Paul H. Douglas and C.W. Cobb were the first to propose this notion. The Cobb-Douglas production function is a linear production function with a degree of one, and its primary input is a combination of labor and capital for any output. The Cobb-Douglas production function is expressed as:

$$Q = AL^a C^\beta$$

Where Output= Output, L= Labor, C= Capital, a= elasticity of Labor,  $\beta$ = Elasticity of Capital, A=Technology. Where A, a, and  $\beta$  are positive, i.e.,  $a > 0$ ,  $\beta > 0$ . According to the equation, the labor, capital, and technology used in the production process directly affect the output level. Cobb-Douglas production function ( $a+\beta=1$ ) considers a constant return to scale. However, when  $a+\beta<1$  and when  $a+\beta>1$ , there is a decreasing return to scale and an increasing return to scale, respectively.

## 2.6 SOLOW GROWTH MODEL

Robert Solow, a Nobel Prize-winning economist, devised the first neoclassical growth model, the Solow Growth Model. The model, known as an exogenous growth model, examines the long-term changes in an economy's output level over time due to changes in the rates of population growth, savings growth, and technological advancement. The following is an assumption made by the Solow Growth Model: (a) Population growth rate 'g' that is constant (b) Savings rate 's' that is constant. (c) Using the same manufacturing method but accounting for capital and labor as inputs ( $Y = aF(K, L)$ ). (d) Constant return to scale (e) Finally, it posits that the capital accumulation equation  $K' = K(1-d) + I$  links the current capital stock (K), the future capital stock (K'), the rate of capital depreciation (d), and the level of capital investment (I) (CFI Team, 2019).

## 2.7 ENDOGENOUS GROWTH MODEL

The endogenous growth model is an economic theory that focuses on explaining countries' long-term economic growth. According to the theory, a nation's long-term economic growth depends more on internal factors like research and development (R&D), entrepreneurship, innovation, and the caliber of its institutions and government policies. The endogenous growth model contrasts with the slow growth model, emphasizing external factors like capital accumulation and technological progress as long-term growth drivers. The importance of human capital is one of the main concepts of endogenous growth theory. It implies that spending on training, education, and the advancement of knowledge and skills significantly impacts economic growth. A workforce with outstanding education and technical proficiency is more inventive and productive, boosting output and growth. The model often emphasizes increasing returns to scale, which implies that as an economy produces more, it gets more efficient and experiences faster growth (CFI Team, 2023).

## Empirical Literature

Numerous research studies have examined how Microfinance Bank Credit affects output performance in Nigeria, and each has come to a different conclusion. These studies covered a range of topics, some of which were domestic literature and others which were international literature. The results of each investigation confirm or refute various underlying arguments regarding the conceptual relationships. This section looks at empirical studies by foreign and domestic academics.

## Impact on Economic Growth

Oli (2018) investigated how microfinance institutions impacted Nepal's economic growth. The investigation employed multiple regression models to examine the importance and influence of microfinance institutions on Nepal's economic development. The investigation demonstrates a positive relationship between economic growth and the total number of employees, members, ratio of microenterprise loans, total assets, total loans, total deposits, and growth in the broad money supply. In another study, Khalaf and Saqfalhait (2019) investigated the

impact of microfinance institutions (MFIs) on economic growth in Arab countries. The study utilized a panel data model for six Arab countries from 1999 to 2016. The results reveal that MFIs do not improve economic growth in Arab countries. Through a GMM panel study between 1999 and 2016, Banto and Monsia (2021) examined the statistical relevance of MFIs' and banks' performance on economic development. The study's key finding is that, while relatively small, MFIs' success impacts economic growth even when banks' performance is considered. Thanh, Saito, and Duong (2019) investigated the effects of microcredit on rural household welfare and economic growth in Vietnam using panel data analysis. The study's conclusions point to microcredit as an efficient development approach at both the micro and macro levels. This section contains literature unique to countries other than Nigeria. A study by Apere (2016) investigated the impact of microfinance banks on economic growth in Nigeria from 1992 to 2013. The study employed econometric analysis and secondary data from the Central Bank of Nigeria (CBN) statistical bulletin. The study's findings show that domestic investment and microfinance bank loans significantly and positively impact Nigeria's economic growth. Also, Murad and Idewe (2017) examined the effect of microfinance institutions on economic growth in Nigeria. By adopting a multiple regression analysis, the study found that microfinance loans significantly positively impact Nigeria's short- and long-run economic performance. Abdulaziz, Ibrahim, and Maitala (2023) evaluated how credit from microfinance banks affected the performance of Nigeria's agriculture industry (1992–2020). The study utilized the ordinary least square regression (OLS) model. According to the study's findings, agricultural GDP and microcredit are positively correlated; however, this association is not statistically significant.

### **Impact on Poverty, Women Entrepreneurship, and SME**

Bent (2019) investigated how microfinance in Ethiopia affected women's empowerment and the elimination of poverty. Through the use of qualitative data analysis, the study found that microfinance institutions (MFIs) offer opportunities to those below the poverty line, focusing on disadvantaged women. Meanwhile, in order to determine the impact of microcredit funding on reducing poverty and empowering women in Pakistan's rural areas, Shafique and Siddique (2020) used a quantitative study approach. The results of the study demonstrate that microcredit funding has a substantial influence on reducing poverty and empowering women. Gakpo et al (2021) examined how microfinance in Ghana affected the growth of small and medium-sized businesses and the reduction of poverty by employing qualitative data analysis. The study showed that 85% of business entrepreneurs get their start-up money from personal savings. The findings also indicate a favorable association between microfinance and small and medium-sized businesses. It also showed that microfinance and poverty reduction have a close relationship. In another study, Zaman, Uddin, and Hossain (2020) examined the impact of several microfinance services on reducing poverty in Bangladesh. The OLS regression model was used in the investigation. The study's findings indicated that microcredit significantly impacted poverty reduction.

Additionally, it was discovered that training, micro insurance, and savings impact Bangladesh's efforts to reduce poverty. Recently, Oteng-Abayie, Amanor, and Osei-Fosu (2023) examined the impact of microfinance intensity on geographic inequality and poverty in Ghana. The study used spatial econometric methods to investigate the spatial relationship between poverty, inequality, and microfinance. The findings showed that microfinance significantly worsens poverty and spatial inequality in Ghana. Nwude and Anyalechi (2018) examined the impact of microfinance activities on rural economic growth and savings in Nigeria from 2000 to 2015. The study utilized the ordinary least square regression technique. The results demonstrate that while introducing microfinance banking in Nigeria did not increase agricultural productivity, it did help improve rural Nigerian saving practices. Salami et al (2020) reviewed the literature on microfinance and rural economic performance in Nigeria. According to the review, evidence in Nigeria shows a significant, strong relationship and improved rural economic performance. Sussan and Obamuyi (2018) employed quantitative analysis to investigate the influence of microfinance banks on entrepreneurship development in Anambra State, Nigeria. The study findings reveal a significant positive impact of microfinance banks on entrepreneurship development in the state.

Meanwhile, Onyele and Onyekachi-Onyele (2020) investigated the effect of microfinance banking on poverty reduction in Nigeria from 1992 to 2018 using the Autoregressive Distributed Lag (ARDL) estimation technique. The study's findings reveal that microfinance bank loans cause poverty reduction in the long run. However, the reverse was the case in the short run.

### **Impact on SME**

Oleka, Maduagwu, and Igwenagu (2014) evaluated the extent to which microfinance banks have helped finance small and medium enterprises (SMEs) in Nigeria. By employing qualitative and quantitative analysis, the study showed strong evidence that access to microfinance significantly enhances the growth of small and medium enterprises in Nigeria. Ofeimun, Nwakoby, and Izekor (2018) examined the relevance of microfinance to small businesses in Nigeria. The study adopted ordinary least square regression as the primary analysis technique. The study demonstrated a substantial positive association between microloan spread and disbursement and small business growth in Nigeria. However, Andabai and Jessie (2018) looked at the relationship between microfinance bank credit and the expansion of small businesses in Nigeria between 1990 and 2016. The study used time series econometrics analysis and concluded that Nigeria's small and medium-sized businesses (SMBs) have not benefited considerably from microfinance institutions' activity. In another study, Yahaya and Kolawole (2022) employed the Autoregressive distributed lags model to study the impact of microfinance banks' facilities on the performance of small and medium-scale enterprises in Nigeria. According to the study's findings, microfinance banks' loans and advances positively and significantly affect SME performance in Nigeria.

## Gaps in Literature and Value Added

The majority of the studies reviewed (see Yahaya and Kolawole (2022); Ofeimun et al. (2018); Andabai and Jessie (2018); Onyele and Onyekachi-Onyele (2020); Gakpo et al. (2021); and Shafique and Siddique (2020)) examined the influence of microfinance on SME growth, poverty reduction, rural development, and women empowerment. Meanwhile, a few studies (see Nwude and Anyalechi (2018) and Apere (2016)) have looked into the effect of microfinance bank credit on output performance in Nigeria. Additionally, the OLS estimation method was used in most of the analyzed research. However, the dynamic ordinary least squares estimate method, which is more resilient in dealing with serial correlation and endogeneity issues, will be used in this investigation. This study backs up the few other studies that have been done and adds to the literature by determining the impact of microfinance bank credit on output performance.

## 3. METHODOLOGY

This study will refer to and be restricted to the boundaries of Nigeria. The data for this analysis, which focused on 1991 to 2020, was sourced from the World Bank World Development Indicators and the Central Bank of Nigeria Statistical Bulletin. The article proposes the following model to investigate the relationship between SME access to finance and employment creation in Nigeria:

$$RGDP = f(MLA, GFCF, INTR, LFDP)$$

Where:

LRGDP= Real Gross Domestic Product (proxy for output performance), MLA= Microfinance bank loan and advances, GFCF= Gross fix Capital Formation, INTR = Lending interest rate, FDP=Financial Deepening.

In order to achieve the objective of this study, this empirical study adopts a multivariate regression model. In order to obtain the long-run estimates, this study employs the Dynamic Ordinary Least Square (DOLS) model, which was first put forth by Saikkomen (1992) and Stock and Watson (1993). By including leads and lags of the first difference of the exogenous regressors in the model, DOLS tackles the issues of endogeneity and Autocorrelation. The model's lags deal with the problem of Autocorrelation, while the leads deal with the endogeneity issue that results from a potential feedback effect. The DOLS model is well known for its robust features since it can be applied when the sample size is small, and the model's variables are in a mixed order of I(0) and I(1). The DOLS model can be specified as follows:

$$LRGDP_t = \alpha_0 + \beta_1 LMLA_t + \beta_2 LGFCF_t + \beta_3 INTR_t + \beta_4 LFDP_t + \beta_5 \Delta LMLAG_t + \beta_6 \Delta LGFCF_t + \beta_7 \Delta INTR_t + \beta_8 \Delta LFDP_t + \beta_9 \Delta LMLAG_{t+1} + \beta_{10} \Delta LGFCF_{t+1} + \beta_{11} \Delta INTR_{t+1} + \beta_{12} \Delta LFDP_{t+1} + \beta_{13} \Delta LMLAG_{t-1} + \beta_{14} \Delta LGFCF_{t-1} + \beta_{15} \Delta INTR_{t-1} + \beta_{16} \Delta LFDP_{t-1} + v_t$$

Where:

L = Natural logarithm of a particular variable.

$\beta_1, \beta_2, \beta_3,$  and  $\beta_4$ = Long-run co-efficient.



$\beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}, \beta_{11}, \beta_{12}, \beta_{13}, \beta_{14}, \beta_{15}$ , and  $\beta_{16}$  = Nuisance Parameters.

$\Delta$  and  $v_t$  = Difference operator & Error term, respectively.

## 4. EMPIRICAL RESULTS

### 4.1 UNIT ROOT TEST

This test determines whether a variable's mean and variance have remained stable throughout time. That is, to determine whether or not the variable is stationary. The Augmented Dickey-Fuller test will be applied to find the unit root in this study. The proposed hypothesis will be:

$H_0$ : the variable is not stationary.

$H_1$ : the variable is stationary.

If the augmented Dickey-Fuller statistics are greater than 5% critical values, we must fail to accept the null hypothesis.

**Table 1:** Augmented Dickey-Fuller Test for Unit Root

Variables	ADF test statistic	t-Statistic	P-value	Order of integration	Decision
<b>LRGDP</b>	-4.110185	-3.612199	0.0183	I(1)	Stationary
<b>LMLA</b>	-4.542378	-1.953381	0.0000	I(1)	Stationary
<b>LGFCF</b>	-3.995676	-2.971853	0.0048	I(1)	Stationary
<b>INTR</b>	-3.848228	-3.612199	0.0313	I(0)	Stationary
<b>LFDP</b>	-3.878672	-3.587527	0.0274	I(0)	Stationary

*Source: Author's construct using E-Views' output Note: Test critical values at a 5% level of significance*

One of the robust features of the DOLS model is its ability to be applied when the model's variables are of the mixed order of I(0) and I(1). The results of the ADF's unit root test, shown in Table 1 above, show that, except INTR and LFDP, which are stationary at levels, i.e., I(0), others became stationary after differencing them once, i.e., I(1).

### 4.2 COINTEGRATION TEST

The co-integration test is a vital econometric tool used to assess the existence of long-term relationships between variables in a regression model. It helps to ascertain whether these variables move together in the long run, indicating a stable equilibrium relationship rather than short-term fluctuations. The Johansen co-integration will be deployed to examine if a long-run relationship exists between the variables. The proposed hypothesis is as follows:

$H_0$  = No Co-integration (There is no stable long-run relationship)

$H_1$  = Co-integration (There is a stable long-run relationship)

If the Trace and Max-eigenvalue tests indicate a cointegrating equation at the 0.05 level, we must fail to accept the null hypothesis.

**Table 2: Johansen Cointegration Test Results (Trace)**

Hypothesized No. of Co-Integrating Equation	Eigenvalue	Trace Statistic	0.05 Critical Value	P.Value
None *	0.826839	116.9779	69.81889	0
At most 1 *	0.64004	67.87897	47.85613	0.0002
At most 2 *	0.548439	39.26965	29.79707	0.003
At most 3 *	0.292554	17.0084	15.49471	0.0294
At most 4 *	0.229988	7.317775	3.841466	0.0068

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

**Table 3: Johansen Cointegration Test Results (Max-eigenvalue)**

Hypothesized No. of Co-Integrating Equation	Eigenvalue	Trace Statistic	0.05 Critical Value	P.Value
None *	0.826839	49.09889	33.87687	0.0004
At most 1 *	0.64004	28.60932	27.58434	0.0369
At most 2 *	0.548439	22.26125	21.13162	0.0346
At most 3	0.292554	9.690622	14.2646	0.233
At most 4 *	0.229988	7.317775	3.841466	0.0068

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

**Decision:** Based on this, we can conclude that there is at least one co-integrating equation, since there is at least one instance where the trace and Max-eigenvalue statistic are below the critical value. Therefore, we fail to accept the null hypothesis at a 0.05 level of significance and infer that there exists a long-term relationship among the variables, indicating that they remain close to each other over time.

### 4.3 ESTIMATION RESULT

**Table 4: DOLS (Newey-West (HAC)) Regression Result**

Variable	Coefficient	Std. Error	t-Statistic	P-Value
LMLA	0.115299	0.022005	5.239762	0.0004
LGFCF	0.199312	0.057305	3.478116	0.0059
INTR	0.003488	0.008915	0.391229	0.7038
LFDP	0.392127	0.139897	2.802966	0.0187
C	3.475865	1.251298	2.777807	0.0195

R-squared	0.998377	Adjusted R-squared	0.995781
F-statistic	384.5309	Prob(F-statistic)	0.00000
Durbin-Watson stat	1.797146		
<b>Diagnostic Tests</b>	Test Statistic	P-Value	
Heteroscedasticity Test (Breusch-Pagan-Godfrey Test)	15.92848	0.4580	
Autocorrelation Test (Breusch-Godfrey Serial Correlation LM Test)	15.67146	0.0004	
Specification Bias Test (Ramsay Test)	0.003926	0.9514	
Normality Test (Jarque-Bera (JB) Test)	0.301319	0.860141	

*Source: Researcher's construct from Eview's output*

In Table 4, the finding shows that microfinance bank loan and advances has a long-run coefficient of 0.115299 and is statistically significant at a 5% significance level. As a result, holding other variables constant, a million-naira increase in MLA increases RGDP, or output performance, by 11.5299% on average. This finding is consistent with findings from Apere (2016), Murad and Idewe (2017), and Abdulaziz, Ibrahim, and Maitala (2023), who found that microfinance bank loans have a significant and positive impact on Nigeria's economic growth. By rational expectation, SMEs' ability to buy more human capital, physical capital, raw materials, meet overhead costs, and working capital, among other factors, grows as microfinance banks lend more money to them. Hence, the output level grows (Orji et al., 2023).

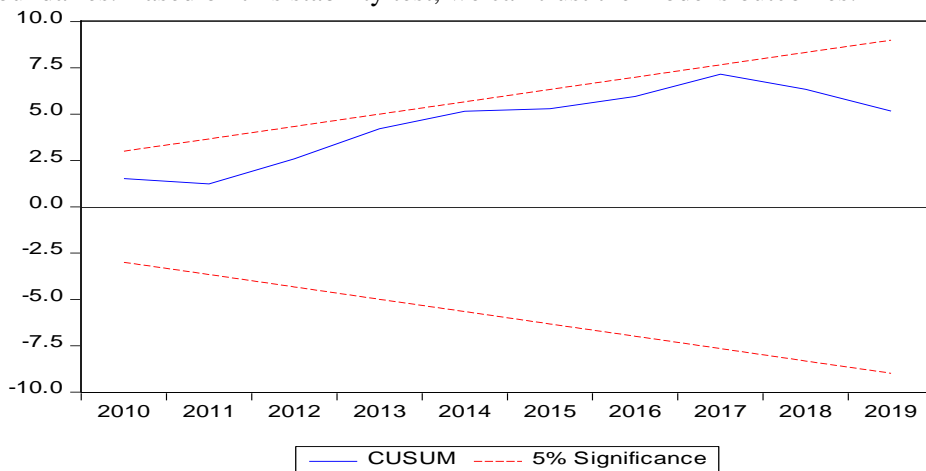
Similarly, gross fixed capital formation has a long-run coefficient of 0.199312 and is statistically significant at a 5% significance level, as shown in Table 4. As a result, a 1% increase in GFCF increases RGDP by 19.93% on average, given that all other variables remain constant. Theoretically, increased investment raises the economy's total demand, which always results in higher output levels.

Furthermore, financial deepening (FDP) has a long-run coefficient of 0.392127 and is statistically significant at a 5% significance level, as shown in Table 4. This means that a percent increase in FDP will increase employment generation by 39.2127% on average, assuming all other factors remain constant. Intuitively, as financial deepening increases, different financial services are made more accessible to the portion of the population excluded from the financial system, such as rural communities, small businesses, and women entrepreneurs, allowing them to purchase new production items and improve their performance, ultimately resulting in output growth. This outcome is in line with the findings of Yahaya and Kolawole (2022), who discovered that the loans and advances provided by microfinance banks have a favorable and significant impact on SME performance in Nigeria.

The diagnostic test indicates that the error term is normally distributed, there is no heteroscedasticity, and the model is correctly specified. Meanwhile, the serial correlation test shows that the error term is serially correlated. However, this issue was resolved by deploying Newey-West Heteroscedasticity and Autocorrelation Standard Error (Newey-West (HAC)) (Gujarati, 2013).

#### 4.4 PARAMETER STABILITY TEST (CUSUM TEST)

Figure 1 below displays the test's findings, demonstrating that all of the model's coefficients are stable over time since they are under the 5% critical boundaries. Based on this stability test, we can trust the model's outcomes.



*Figure 1: CUSUM Plots for Stability Test*

#### 5. CONCLUSION AND RECOMMENDATIONS

Developing nations have experienced a variety of economic challenges that have limited their ability to develop and thrive. Since the pandemic in 2020, Nigeria's economic growth has been trending downhill, creating severe economic and social problems. Hence, this study sets out to critically evaluate the effect of microfinance bank credit on output performance in Nigeria. The study finding shows that microfinance Bank loans and advances have a positive and significant long-run effect on Nigeria's economic growth (RGDP).

Therefore, the study recommends that microfinance Institutions must be adequately harnessed and supported to attain their maximum potential. This involves appropriately regulating Microfinance Banks and reviewing the Microfinance Policy, Regulatory, and Supervisory Framework (MPRSF) to increase public trust in Microfinance Institutions. Additionally, Microfinance banks should be required to provide SMEs with much-needed loans with minimal or reasonable collateral. The government should enact regulations to maintain low Microfinance Bank lending rates and to encourage Microfinance to lengthen the payback period of the loans they extend to their clients. Furthermore, the government and microfinance banks should work together to increase the institution's visibility by informing low-income people, small business owners, entrepreneurs, and residents of rural areas about the financial services provided by this industry that they can benefit from.

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