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NONBANK FINANCIAL INSTITUTION CREDIT MANAGEMENT AND AFRICAN MANUFACTURING SECTOR GROWTH: EVIDENCE FROM DYNAMIC COMMON CORRELATED EFFECT

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Abstract

The lack of a well-functioning financial system hinders economic development in the region. Efforts to improve the depth, stability, and efficiency of financial systems have not yielded the expected results due to structural challenges such as financial constraints, governance issues, and lack of quality institutions. The article investigates the relationship between credit management by NBFIs and the growth of the manufacturing sector in a group of African countries from 1972 to 2021. The study utilizes panel data from 30 African countries and employs dynamic common correlated effect techniques to examine the significance of NBFIs as a source of long-term funding for manufacturing growth. The study found that nonbank financial institution credit improves the manufacturing sector in the long run and short run, although insignificant in the short run. By exploring the role of NBFIs in driving manufacturing sector growth, this study provides valuable insights for policymakers and stakeholders in Africa. The findings can inform the formulation of effective strategies to enhance the contribution of NBFIs to economic development and promote sustainable growth in the region.

1. INTRODUCTION

Every developing country with Africa inclusive, attempts to reach a higher economic growth and eradicate poverty (Hassan et al., 2011). However, many countries in Africa lack a well-functioning financial system which stagnate economic growth within the region (Menyah et al., 2014; Cojocaru et al., 2016). With the more inclusion of the African continent in the world economy, the region have embarked on momentous efforts to improve in the depth, stability and efficiency of their financial systems (Khan & Senhadji,

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2003; Samargandi et al., 2015; Cojocaru et al., 2016). Nevertheless, these efforts have usually not fetched the anticipated economic growth to a number of important structural challenges, principally financial constraints, good governance and lack of quality institutions (Luintel et al., 2008). To ensure the success of the sustainable development goals, which comprise the post-2015 world development agenda, it is crucial to enhance the effective utilization of existing resources and explore opportunities for additional funding from the private sector (International Monetary Fund, 2015). However, the aftermath of the global financial crisis has left financial markets vulnerable, resulting in limited availability of long-term financing necessary to support productive investments (World Bank, 2015a). More specifically, traditional bank lending has significantly decelerated as banks recover from the financial crisis and adapt to stricter regulatory measures, such as the Basel III capital and liquidity requirements. Consequently, the need for alternative forms of financing has become imperative (World Bank, 2013). This article examines the role of non-bank financial institutions (NBFIs) in supplying long-term funding for the manufacturing sector. The study investigates the relationship between credit management by NBFIs and the growth of the manufacturing sector in a group of African countries from 1972 to 2021. NBFIs are financial institutions that lack a full banking license and, as a result, cannot accept deposits. However, they both compete with and complement traditional banking institutions by offering alternative financial services such as pension funds, insurance companies, finance companies, mutual funds, money market funds, microloan organizations, and venture capitalists (Mishkin, 2007; World Bank, 2015b).

The recent global economic crisis clearly illustrates that if the growth of non-bank financial institutions (NBFIs) is too rapid and lacks proper regulation and monitoring, it can lead to circumstances that make a financial crisis more likely. Liang and Reichert (2012) issued a cautionary statement, highlighting that inadequate regulation of NBFIs allows for excessive risk-taking, which can have disastrous consequences for both the financial sector and the real economy. This concern was reiterated in the end-of-year 2015 report on shadow banking monitoring by the Financial Stability Board (2015). The report asserted that while NBFIs contribute to financing the real economy, they can pose a systemic risk when they perform functions similar to banks and when their interconnectedness with banks is strong. Additionally, recent studies have raised significant questions regarding the relationship between finance and economic growth, particularly in Africa where both financial development (FD) and economic growth have remained subdued, leaving the debate unresolved. Specifically, these studies have found that the connection between financial development and economic growth is weakening in developed and developing countries, and that "financial depth" no longer plays a significant role in determining long-term economic growth (Demetriades & Rousseau, 2015). According to Demetriades and James (2011), the connection between financial development (FD) and long-term economic growth in Africa is either weak, at best, or nonexistent, at worst. Within the finance-growth nexus, one sector that has emerged as a crucial driver of growth is the manufacturing sector (Obasan & Adediran, 2010; Addo, 2017)

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Our literature review on the subject of the examined countries found a lack of studies exploring the influence of non-bank financial institutions (NBFIs) credit on the growth of the manufacturing sector. The available studies were limited in scope, with some focusing solely on specific components of NBFIs, such as pension funds. This narrow focus may have underestimated the overall impact of NBFIs on real sector growth in these countries. Other studies concentrated on examining the effects of regulation on the stability and performance of NBFIs, while some explored the relationship between NBFIs and growth. Additionally, certain studies delved into the impact of NBFIs on credit accessibility and investment in particular sectors. This research aims to contribute to the existing literature by assessing the relevance of NBFIs in driving growth specifically within the manufacturing sector, which serves as a key driver of economic development. Furthermore, considering the potential of NBFIs to facilitate long-term growth and the associated risks stemming from their interactions with other financial institutions, this study will investigate both the short-term and long-term effects of NBFI credit on manufacturing sector growth in Africa. To accomplish this, the article employs panel data from various African economies and utilizes dynamic common correlated effect techniques to re-examine the significance of NBFIs, as a source of long-term funding, for manufacturing growth.

2. LITERATURE REVIEW

Existing literature primarily focuses on the relationship between NBFI (Non-Bank Financial Institutions) and economic growth, as no specific study has directly addressed the impact of NBFI on the manufacturing sector. The manufacturing sector, often referred to as the engine of growth, typically follows the same trend as economic growth (Obasan & Adediran, 2010; Addo, 2017). NBFI operates as intermediaries within the financial sector, engaging in activities such as mobilizing funds from individuals, corporations, and high-net-worth clients through time deposit schemes. They also provide financing to both small and large corporations and invest funds in the secondary market and government securities (Khowaja et al., 2020). These financial intermediaries encompass various categories, including investment finance services, risk inheritance, pension funds, mutual funds, insurance companies, credit rating agencies, hedge funds, and fund advisors. NBFI plays a significant role in mobilizing funds and offering asset-based financing to underserved markets, particularly micro, small, and medium enterprises in both developed and developing countries (Islam & Osman, 2011). These intermediaries actively contribute to the development of the economy at both micro and macro levels, facilitating stock market capitalization, fund mobilization, and providing financing opportunities for businesses of various sizes. In general, research indicates that the relationship between non-bank financial institutions (NBFI) and economic growth can occur through both direct and indirect means. Regarding direct effects, NBFIs have the potential to directly impact factors such as savings, investment, risk distribution, and overall productivity, thus contributing to economic growth (Nassr & Wehinger, 2014; Alderman & Yemtsov, 2013; Liang & Reichert, 2012; Meng & Pfau, 2010). Conversely, the connection between NBFIs and economic growth can also be indirect, operating

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through their influence on the development of banks, as well as capital markets encompassing stocks and bonds, which subsequently affect economic growth (Sufian & Majid, 2009; Meng & Pfau, 2010). However, it is important to note that if the growth of available funds for lending occurs too rapidly and lacks proper regulation and monitoring, it could create conditions that are vulnerable to a financial crisis. In this regard, Liang and Reichert (2012) caution that inadequate regulation of NBFIs can encourage excessive risk-taking, leading to disastrous consequences for both the financial sector and the economy.

After examining the available literature, it is evident that only a small number of studies have explored the impact of Non-Bank Financial Institutions (NBFI) on both economic growth and specific sectors. Ndugbu et al. (2015) and Osuala and Odunze (2014) conducted separate investigations using different NBFI indicators from 1996 to 2010 and 1992 to 2012, respectively. Their findings indicated a positive correlation between insurance companies' assets and economic growth, whereas no significant relationship between finance companies, discount houses, and economic growth was observed in Nigeria. Osuala and Odunze (2014) employed the autoregressive distributive lag (ARDL) model, while Ndugbu et al. (2015) utilized the ordinary least squares methodology in their research. Another empirical study focusing on African nations revealed that if NBFIs promote excessive risk-taking, it can have a detrimental impact on economic growth. Specifically, a cross-country panel study involving Egypt, Nigeria, and South Africa discovered a negative association between NBFI development and economic growth for both developed and emerging market countries (Liang & Reichert, 2012).

Additional studies examining the intermediary functions of Non-Bank Financial Institutions (NBFIs) without directly exploring their connection to economic growth have been conducted by Ofoeda et al. (2016), Kabia et al. (2015), and Hamdi (2015). Kabia et al. (2015) utilized data from a case study involving 150 participants in Sierra Leone. Their findings concluded that NBFIs play a role in improving financial access for impoverished communities, thus reducing poverty. The study analyzed data spanning from 2001 to 2005. Hamdi (2015) conducted research in Sudan and reported that due to the small scale of NBFIs and strict regulatory measures imposed by the Central Bank in that country, NBFIs seldom invest in extractive industries such as mining, oil, and gas. Lastly, Ofoeda et al. (2016) relied on evidence from Ghana spanning the years 2006 to 2010. Their findings suggested that effective regulation contributes to the stability and profitability of NBFIs in that particular country. However, several studies have explored the impact of financial development on the manufacturing sector. Mbah and Okoli (2020), Asaleye, Adama, and Ogunjobi (2018), and Egbuche, Achugbu, and Atueyi (2020) discovered a positive relationship between financial sector expansion and growth in manufacturing output. Conversely, Ezeaku et al. (2018) and Ademola and Obamuyi (2018) found a negative effect of private sector credit on real output growth. Considering the limited research on the influence of NBFIs on the manufacturing sector in Africa, as well as the conflicting results from previous financial development studies, it is crucial to reevaluate this relationship using panel data from African countries.

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3. DATA AND METHODOLOGY

Data

This study used data from World Bank Development Indicators for 30 African countries spanning from 1972 to 2021. The time frame is based on availability of data in the selected countries. The countries chosen for the study are Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo DR, Congo Rep., Cote d'Ivoire, Eswatini, Gabon, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, and Togo. Table 1 presents summary description of variables.

Table 1: Description of study variables

Variable	Description	Measure	Designation	Source
MS	Manufacturing Sector contribution to GDP in percentage point	Annual	Endogenous variable	World Bank, World Development Indicators, 2022
NBFIC	Credit to the Private Sector by non-Bank financial institutions Percentage of GDP	Annual	Regressor variable	World Bank, World Development Indicators, 2022
Invest	Gross domestic investment the ratio of the gross capital formation to GDP	Annual	Control variable	World Bank, World Development Indicators, 2022
Trade	Trade Openness [(Imports + exports)/GDP]*100	Annual	Control variable	World Bank, World Development Indicators, 2022
Gov	Government Expenditure - General government final consumption expenditure as a percentage of GDP	Annual	Control variable	World Bank, World Development Indicators, 2022
PG	Population percentage growth rate	Annual	Control variable	World Bank, World Development Indicators, 2022

Model Specification

The DCCE estimation equation for this study can be expressed following Ezeake *et al* (2018):

$$lnMS_{it} = \alpha_i + \theta_i lnMS_{i,t-1} + \beta_1 lnNBFIC_{it} + \gamma_i X_{it} + \sum_{q=0}^{L} \varphi'_{i,q}\, \hat{g}_{t-q} + e_{it} \qquad (1)$$

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Where $lnMS$ represents log value of manufacturing sector contribution to GDP, $lnNBFIC$ is the log of nonbank financial institution credit and X is the control variables. i = 1, 2, …, N, $\hat{g}_t = \widehat{lnMS}_t - \widehat{NBFIC}_t$. L is the number of lags while e_{it}, is the error term.

Cross Sectional Dependency And Panel Unit Root Test

In a macro panel with a longer time dimension, it is crucial to acknowledge the existence of cross-sectional dependency, as a finite number of observed or unobserved common factors affect all countries in the sample frame to varying degrees (Coakley et al., 2006). The panel estimation can become inconsistent due to spatial spillover effects, as noted by Eberhardt & Teal (2011) and Pesaran (2006). To identify the presence of cross-sectional dependence (CD) for each variable, we will employ the CD-test using the Pesaran (2004), Breuch and Pagan (1980) LM, and Pesaran et al. (2008) methods. The null hypothesis in the Pesaran (2004) test assumes cross-sectional independence among the panels, while the alternate hypothesis assumes cross-sectional dependence. This CD-test statistic is robust against various econometric issues such as non-stationarity, balanced and unbalanced panels, multiple or single structural breaks in slope parameters and error variances, parameter heterogeneity, and it performs well even with small samples. It can be applied to both balanced and unbalanced panels (Burret et al., 2016, Pesaran, 2004).

Another diagnostic test in a macro panel analysis after the cross-sectional dependency test, is the panel unit root. It is applied to decide the order of integration of the variables. To determine the order integration of the variables, we will apply Pesaran (2007) CIPS test, an extension of the Im et al. (2003) test. The unit root test is a second-generation test that eases the limiting assumption of Im et al. (2003) test on cross-sectional independence. The CIPS is based on a cross-sectionally augmented ADF (CADF) regression, where lagged cross-sectional averages of individuals, $\bar{X}_t$, are incorporated to capture the cross-section common factor effects.

Panel cointegration test

Engle and Granger (1987) were the first to introduce the concept of cointegration in econometric analysis. The purpose of testing for cointegration is to determine whether variables have a long-term relationship, wherein any short-term deviations will eventually be corrected over time. In the literature, two generations of panel cointegration tests are available. The first-generation tests, developed by Pedroni (1999, 2001, 2004), allow for heterogeneity in the intercepts and slopes across panels and account for small sample sizes. However, these tests lack the ability to address cross-sectional dependence. To overcome this limitation, the second-generation cointegration tests were introduced by Westerlund (2007) and further refined by Westerlund and Edgerton (2008). The second-generation tests not only consider cross-sectional dependence but also exhibit robustness to structural breaks. These tests employ an error correction model and offer four panel cointegration test statistics. Unlike residual-based methods, the Westerlund tests do not impose common factor restrictions. The null hypothesis of these tests assumes no cointegration, indicating that the error correction model equals zero. Among

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the four test statistics, Gτ and Gα focus on cointegration within individual panels, while Pτ and Pα examine cointegration for the entire panel. The computation of Gτ and Pτ utilizes the conventional standard error of the error correction model parameters, while Gα and Pα are adjusted for heteroscedasticity and autocorrelations based on the standard errors proposed by Newey and West (1994).

Dynamic Common Correlated Effects

According to Pesaran (2006), the CCE method is appropriate for obtaining consistent outcomes for the slope coefficients when dealing with panel data that contains spatial errors. The estimates obtained using this method are also in line with the existence of correlated errors across different sections (Pesaran & Tosetti, 2011). Everaert and De Groote (2016) discovered that the CCE approach is more effective compared to a panel regression model within groups approach, as it is specifically designed to consider unobserved common factors in the error term. Xu, Cai, and Fang (2016) mention that prior knowledge of the number of unobserved common factors is not required, and Chudik, Pesaran, and Tosetti (2011) found that the approach remains reliable even when the number of factors in a panel data set exceeds the cross-section averages. The CCE estimator may encounter inconsistency if the lagged dependent variable, which is not strictly exogenous according to the dynamic specification, is included in the model (Chudik & Pesaran, 2015). Chudik and Pesaran (2015) and Everaert and De Groote (2016) acknowledge that the CCE method is consistent in a static panel setting, but it becomes inefficient when the panel involves a lagged dependent variable or weakly exogenous variables. To address this concern, Chudik and Pesaran (2015) proposed the DCCE estimator, which is suitable for dynamic models. Their findings suggest that the estimator remains consistent if an appropriate lag is selected for the cross-sectional means. The DCCE estimator can handle varying slope coefficients, endogenous regressors, as well as both balanced and unbalanced panels. It also includes a test to detect cross-sectional dependence, assuming the null hypothesis that the error terms are weakly cross-sectional dependent. Additionally, the estimator can be utilized in small sample time series data, as it incorporates a correction for small sample bias. The DCCE estimator is based on an autoregressive distributed lagged (ARDL) panel data model that incorporates unit-specific regressions augmented by cross-sectional information (Pesaran & Chudik, 2015).

4. RESULTS AND DISCUSSION

Table 2 presents the summarized statistics for the variables examined in the study. The natural logarithm of manufacturing sector value added (lnMS) had an average of 0.89, ranging from -0.63 to 1.54. Similarly, the natural logarithm of credit to the private sector by non-banks (lnNBFIC) averaged -0.51, with a range of -2.75 to 1.86. Additionally, the natural logarithm of investment to GDP (lnInvest) and the natural logarithm of trade openness (lnTrade) had average values of 1.22 and 1.72, respectively. The average for the natural logarithm of government consumption expenditure to GDP (lnGOV) was 1.066, while the natural logarithm of population growth rate (lnPG) averaged 0.396 over

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the reference period. Furthermore, Table 3 displays the correlation matrix, indicating a mixed relationship between the independent variables and the dependent variable. Positive associations were found between lnMS and each independent variable, except for lnPG, which showed a negative correlation. Moreover, no significant correlation among the regressors was observed, indicating the absence of multicollinearity issues.

Table 2: Variable descriptive statistics

VARIABLE	OBS.	MEAN	STD. DIV.	MIN.	MAX.
lnMS	1,060	0.893	0.341	-0.633	1.547
$lnNBFIC$	1,060	1.093	0.324	0	1.847
$lnLnvest$	1,060	1.219	0.333	-0.533	1.951
$lnTrade$	1,060	1.716	0.287	-0.105	2.352
lnGOV	1,060	1.066	0.324	-0.040	1.662
lnPG	1,060	0.396	0.185	-1.058	0.909

Note: *lnMS* = log of manufacturing sector value added, *lnNBFIC* = Log of credit to the private sector by non-banks, *lnInvestment* = Log of investment to GDP, *lnTrade* = Log of trade openness, *lnGOV* = Log of government consumption expenditure to GDP, *lnPG* = Log of population growth rate.

Table 3: Correlation Matrix

Variable	$lnMS$	$lnCPSNB$	$lnINV$	$lnTOPN$	$lnGOVGDP$	$lnPOPgr$
$lnMS$	1					
$lnNBFIC$	0.034	1				
$lnLnvest$	0.241	-0.008	1			
$lnTrade$	0.164	-0.007	0.319	1		
lnGOV	0.185	0.158	0.336	0.283	1	
lnPG	-0.163	-0.038	0.064	-0.113	-0.085	1

Cross Sectional Dependence and Panel Unit Roots

Table 4 displays the LM statistics of Breuch and Pagan (1980), adjusted by Pesaran et al. (2008) and Pesaran (2004) to account for cross-sectional dependence. The results indicate that the variables exhibit significant levels of 1%, leading us to reject the null hypothesis of cross-sectional independence. Consequently, the findings of the study suggest the presence of cross-sectional dependence among the variables. To assess the stationarity of the variables after detecting cross-sectional dependence, we employ Pesaran's CADF approach. Table 5 presents the outcomes, revealing that all variables, except lnNBFIC and lnPG, are integrated of order one I(1), while lnNBFIC and lnPG are integrated of order zero I(0).

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Table 4: Cross-sectional dependence test

Variables	CD (Pesaran, 2004)	CD_{LM} (Breuch and Pagan, 1980)	LM_{adj} (Pesaran et al, 2008)	Decision
$lnMS$	7.739***	1551***	254.8***	Reject Ho
$lnNBFIC$	2.066**	85.99**	9.113**	Reject Ho
$lnLnvest$	5.882***	1222***	191.9***	Reject Ho
$lnTrade$	9.588***	898.6***	130***	Reject Ho
lnGOV	1.208	924.7***	135***	Reject Ho
lnPG	7.598***	1425***	230.8***	Reject Ho

Note: ***, ** and * show significance at 1%, 5% and 10% level

Table 5 : Pesaran's CADF test results

Variables		Level	1st Difference		Decision
	$Constant$	$Constant\ and\ Trend$	$Constant$	$Constant\ and\ Trend$	
	$tbar$	$tbar$	$tbar$	$tbar$	
$lnMS$	-1.705	-2.506	-4.879***	-5.059***	I(1)
$lnCPSNB$	-2.465***	-2.836***	NA	NA	I(0)
$lnINV$	-2.383***	-2.524	-4.939***	-4.958***	I(1)
$lnTOPN$	-1.671	-2.524	-5.129***	-5.161***	I(1)
$lnGOVGDP$	-2.249**	-2.580	-5.069***	-5.163***	I(1)
$lnPOPgr$	-3.875***	-4.772***	NA	NA	I(0)

Note: ***, ** and * show significance at 1%, 5% and 10% level. NA = Not applicable

Panel Cointegration Test

The cointegration test results displayed in Table 6 demonstrate the effectiveness of the Westerlund cointegration test in accounting for cross-sectional dependence within the model. To examine panel cointegration while accounting for cross-sectional dependence, we utilized the panel cointegration test proposed by Westerlund (2007). The findings from this test indicate the existence of cointegration among the groups, as indicated by the robust p-values.

Table 6 : **Westerlund cointegration test**

Model with no interaction				
Statistic	**Value**	**Z value**	***p* value**	**Robust *p* value**
G_t	-2.286	-2.593	0.005	0.000
G_a	-8.248	-0.930	0.176	0.000
P_t	-8.193	-1.569	0.058	0.200
P_a	-6.469	-2.311	0.010	0.100

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Table 7: DCCE results on the effect of nonbank financial institution credit on the manufacturing sector (Dependent variable: *lnMS*)

Variable	Coef	Standard Error	P-Value
Short Run			
C	-0.218	1.300	0.867
$\Delta lnNBFIC$	0.028	0.020	0.167
$\Delta lnInvest$	-0.072	0.052	0.167
$\Delta lnTrade$	0.223	0.147	0.129
$\Delta lnGOV$	-0.061	0.068	0.367
$\Delta lnPG$	-0.853	1.255	0.497
Long Run			
ec	-0.411	0.146	0.005
$lnCPSNB$	0.034	0.014	0.033
$lnInvest$	0.059	0.058	0.306
$lnTrade$	0.172	0.062	0.006
$lnPG$	-0.051	0.073	0.487
$lnGOV$	0.305	0.068	0.000
$F-Statistics$	2.74		0.000
$R-squared$	0.60		
$CD\ Statistic$	1.01		0.313
$No\ Obs$	1038		
$No\ Country$	30		

Table 7 displays the outcomes of the dynamic common correlated effect (DCCE) analysis for both short and long-term periods. Initially, in the short run, the coefficient for lnNBFIC is positive but not statistically significant at the 5% level. Similarly, the estimated coefficient for trade openness (lnTrade) is positive but lacks significance in the short run. Conversely, the coefficients for investment level (lnInvest), government size (lnGOV), and population growth (lnPG) exhibit a negative impact on the manufacturing sector in the short run, yet none of these variables are statistically significant. Moving on to the long run, Table 7 reveals that lnNBFIC has a positive and significant effect on lnMS at the 5% level. This implies that a percentage increase in nonbank financial institution credit leads to a 0.034% growth in manufacturing sector output over the long term. Conversely, the estimated coefficient for the logarithm of total investment (lnInvest) is positive but not statistically significant. Furthermore, both the logarithm of trade openness (lnTrade) and government size (lnGOV) have a positive and significant influence on manufacturing value added (lnMS). Specifically, a percentage increase in trade openness and government size results in a 0.172% rise in manufacturing value added (lnMS) each. However, similar to the short run, an increase in population growth rate (lnPG) has a negative impact on manufacturing value added (lnMS) and remains statistically insignificant in the long run.

Table 7 presents findings that indicate the speed of adjustment to long-term equilibrium, referred to as error correction (ec), is -0.411, demonstrating its significance. This suggests

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that deviations in the short term are annually adjusted by 41.1% towards the long-run equilibrium in Africa. To address the issue of cross-sectional dependence in the data, the study examined the cross-sectional independence of the results. The analysis included a CD statistic with a p-value of 0.313 under the null hypothesis of cross-sectional independence, leading to the conclusion that the problem of cross-sectional dependence no longer exists. Moreover, the F-statistic and an R-squared value of 0.47 indicate the efficiency and consistency of the estimates.

5. DISCUSSION

The availability of credit to the private sector plays a crucial role in driving investment, which is essential for firms and other economic agents to engage in the acquisition of new machinery. Credit provided to the private sector is widely recognized as a significant factor in promoting economic growth and serves as an important indicator of the development of the financial sector (Dembiermont & Drehmann, 2013). This research investigates the influence of credit extended by nonbank financial institutions on the growth of the manufacturing sector in Africa. The study reveals that domestic credit provided by non-bank entities has a positive but statistically insignificant impact on the contribution of the manufacturing sector to the GDP in the short term. However, in the long term, this credit demonstrates a positive and significant effect at a 5% level of significance. In essence, an increase in credit to the private sector from non-bank financial institutions is associated with a subsequent increase in the average value added by the manufacturing sector in Africa over time. Firms rely on non-bank financial intermediaries to provide effective risk management services, as capital markets are not always efficient, and firms seek to stabilize their earnings over time. These research findings align with the endogenous growth theory, which posits that the provision of financial services such as nonbank credit stimulates innovation and, consequently, leads to economic growth. Over the long run, this study supports the findings of Okere, Okere, and Nwaneto (2020) who established a positive relationship between credit to the private sector and the manufacturing sector.

6. CONCLUSION

This research investigated the influence of credit provided by financial institutions on the development of the manufacturing sector in selected countries in sub-Saharan Africa from 1972 to 2021. To account for cross-sectional dependence, the study employed a dynamic common correlated effect (DCCE) methodology. The effectiveness of different types of financial structures, namely bank-dominated and market-based systems, in promoting economic growth remains uncertain. As the profitability of traditional financial intermediation services has declined, intermediaries have had to adapt by introducing new products and approaches. The study highlights the importance of financial infrastructure improvement in African governments' agendas. It suggests mainstreaming initiatives such as credit scoring systems and payment gateways to facilitate credit availability, particularly for small and medium-term enterprises (SMEs) in the

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manufacturing sector. Access to finance is a key obstacle hindering the expansion of SMEs. Addressing this issue would enable the manufacturing sector in Africa to operate at its full capacity along the production possibility curve. Additionally, the monetary authorities in African countries should formulate appropriate policies and strategies to strengthen non-bank financial institutions, thereby enhancing the productivity of the manufacturing sector. One potential strategy could involve the development, testing, and implementation of a financial literacy and education program specifically tailored for manufacturing firms. Lastly, future research should compare the impacts of bank financial institutions and non-bank financial institutions on the growth of the manufacturing sector.

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