Does Access to SME Credit enhance Employment Generation in Developing Countries? A New Evidence from Nigeria

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Abstract

Developing countries have been faced with different economic constraints that have impeded their growth and development potentials. In Nigeria, the reduction in formal sector employment and the high unemployment rate, which pose severe economic and social challenges, have become matters of urgent national concern. This study uses secondary data collected from 1991Q1–2020Q4 to examine the Impact of SME credit access on employment generation in Nigeria. It utilizes the Autoregressive Distributed Lag (ARDL) estimation technique. The results show both the short and long-term effects of SME credit access on employment generation in Nigeria. The outcome also showed that access to SME credit has a positive and statistically significant impact on creating employment. Therefore, the study recommends that banks should be obliged to offer much-needed funds to SMEs with little or affordable

collateral. The government should take regulatory measures to keep commercial banking loan rates competitive and not unnecessarily exorbitant. Furthermore, the government should implement effective monitoring and evaluation mechanism to ensure that development financial institutions meet their mandates and objectives. In addition, the government, chambers of commerce and industry, and other non-governmental organizations should hold regular seminars for potential and existing small and medium-sized firm operators on how to plan, organize, direct, and control their operations to make them more productive as job creators.

Keywords: credit accessibility; informal sector; Job creation; Small business finance; and employment

JEL Code: E24, E51, O16

1. Introduction

In many developed and developing countries, the issue of assess to credit and employment generation have become very fundamental in achieving certain goals of national interest. Thus, employment generation is a critical component of every macroeconomic economic goal and recovery strategy globally (Orji, et al 2018). Politically, employment opportunities give young people an alternative to violence and an interest in the peace process. Employment supports the economy's growth as a whole, offers low-income individuals a source of income, and boosts domestic demand for goods and services. Engagement in productive employment can promote social welfare through increased income and poverty reduction (Ojonta, et al, 2021). Undeniably, a dearth of formal sector employment and the current unemployment rate pose social, economic, and political issues for the society. For example, a loss of income lowers people's living standards, leads to poverty, deteriorates physical and mental health, increases crime, and increases the government's costs for providing benefits like Medicaid, food assistance, and unemployment insurance. (Taiwo, 2019).

As a remedy, numerous academics frequently contend that Small and Medium Scale Enterprises (SME)s' ability to access financing increases their production and capability to create jobs. Most businesses worldwide are SMEs, crucial in creating jobs and advancing the global economy. Over 50% of all occupations worldwide are held by SMEs, making up about 90% of businesses (Kumar, 2017; Taiwo, 2019; World Bank

Group, 2021). The World Bank (2021) noted that "by 2030, 600 million jobs will be needed to support the globe's expanding labor force, making SME expansion a primary focus for several governments around the globe."

In Africa, the SME sector is still expanding, both directly and indirectly. However, there are still several obstacles to overcome, the biggest of which is a lack of financing availability. Daniel, Conor, and Janina (2021) claim that cost and accessibility are the two biggest obstacles to financing for African SMEs. He also alluded that in sub-Saharan Africa, one-third to a fifth of SMEs can obtain a bank loan or line of credit. According to Nyanzu and Quaidoo (2017), only 21.58 percent of SMEs in Ghana have access to credit, while the remaining 78.42 percent still need to. Similarly, the same experience was noticed in Nigeria as the number of small businesses increased. However, they also faced the same challenges, of which a lack of access to credit was the most significant (Taiwo, 2019).

SME loan access allows them to obtain funding to expand their firm by acquiring more human capital, physical capital, raw materials, meeting overhead costs, and working capital, among other things. This expansion will necessitate the employment of more workers in order to produce more output than previously produced. Ismail and Adegbemi (2012) posited that promoting small-scale industries in the informal sector will result in industrial indigenization, generating more jobs per unit of investment, utilizing local raw materials, and developing local technology and labor. Abel-Koch (2019) 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. However, this is not the case for SMEs in Nigeria due to the lack of access to financing, further exacerbating the nation's high unemployment rate, extreme poverty, and weak economic growth. According to Taiwo (2019), one factor affecting the creation of jobs in Nigeria is the difficulties small and medium-sized businesses face in expanding and improving their employment capacity due to a lack of finance.

The Federal Government has implemented several measures over the years, including financial, fiscal, and industrial strategy measures, to promote the expansion of small and medium-sized businesses (SMEs), making them strong enough to support economic growth and create jobs. According

to Sanusi (2003), "effort has been made in the funding and setting up of industrial estates to reduce overhead costs; establishment of specialized financial institutions, including the Small Scale Industry Credit Scheme (SSICS), the Nigerian Industrial Development Bank (NIDB), and the Nigerian Bank for Commerce and Industry (NBCI) to provide long-term credit; facilitating and guaranteeing external finance by the World Bank, the African Development Bank, and other international financial institutions; facilitating the establishment of the National Directorate of Employment (NDE), which also initiated the setting up of new SMEs; the establishment of the National Economic Reconstruction Fund (NERFUND) to provide medium- to long-term local and foreign loans for small and medium-sized businesses, particularly those located in rural areas; and provision of technical training and advisory services through the Industrial Development Centers; and the National Economic Reconstruction."

However, these strategies addressing the unemployment problem may have failed to produce the desired results due to poor execution. In particular, institutional processes for implementation may be the cause of ineffectiveness in many circumstances. Taiwo (2019) states Nigeria needs a trustworthy and efficient monitoring and evaluation mechanism. Furthermore, Taiwo (2019) observed that despite multiple interventions meant to address the issue, the number of unemployed people continues to climb unabatedly despite governments at all tiers expressing the most urgent need to create jobs to resolve the issue unemployment problem through the SME sector. This result suggests that SME support programs are not perceived as improving small enterprises' foundation and capability to expand to the point at which they can provide steady employment while adding to sustainable development. In light of this unfortunate trend, this study investigates the impact of SME access to credit on employment generation 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

Due to the diverse sizes and depths of each country's economies, finding a worldwide definition for SMEs has proven difficult, resulting in different definitions by different

agencies and countries. However, small and medium-sized firms (SMEs) are independent, unconnected companies with fewer than a specific number of employees (OECD, 2005). Although the minimum number of workers required to qualify as an SME in the European Union is 250, the minimum number of workers varies depending on the country. Nevertheless, other countries have a cap of 200 employees, while the US classifies enterprises as SMEs if they employ fewer than 500 people.

Additionally, in its Monetary Policy Circular No. 22 of 1988, the Central Bank of Nigeria described small-scale businesses as having a yearly sale of below five hundred thousand nairas. For the intent of this study, small and medium-sized enterprises are those with investments in machinery and equipment of less than five hundred thousand and two million nairas, respectively, and less than fifty and hundred paid employees, respectively.

Ahiawodzi and Adade (2012), who was quoted by Kasum and Oke (2014), defined access to credit as the capacity of the business to get money from a wide range of sources (internal or external; informal and formal). According to Kira and He (2012), referenced in Kasum and Oke (2014), access to finance refers to how easily an enterprise may get and use outside funding since a business influences its internal finances. Credit access is also the ability to obtain a loan at a cheap interest rate. In this study, the availability of loans to SMEs and the ability to accept such loans at affordable rates were regarded as aspects of SME access to credit.

The International Labor Organization (2018) defines an employed person as an individual who is 15 years of age or older and has worked (for pay or profit) for a minimum of an hour within an entire week or holds a job from which they are away for any reason (holidays, sick leave, maternity leave, Etc.). Families are included, as well as employees and independent contractors. This category also includes unauthorized workers. Nevertheless, for this study, an individual is considered to be employed if they have worked (for pay or profit) for a minimum of an hour during a given week or if they have a job from which they are absent for any reason (holidays, sick leave, maternity leave, etc.).

A. SME Credit Access theories

Many ideas have been committed in part or whole to explain SME credit availability and employment generation within the scope of cooperating finance and macroeconomics, respectively, in light of various

investigations. This study will look at a few of these hypotheses to see which ones better explain the facts in context.

2.1 Pecking Order Theory: According to the pecking order theory, made famous by Myers and Majluf (1984), Through retained earnings, a company ought to seek to fund itself first. When this option is unavailable, a business should consider taking on debt. A company should only issue new stock as the final financing means. According to the pecking order idea, finance comes from three different sources: internal cash, loans, and new equity.

Internal finance is used first, then debt, and lastly, the stock is issued when it becomes unfeasible to continue issuing debt. This is how businesses organize their financial sources, choosing internal financing first, debt second, and equity as a "last resort." According to this idea, when firms require external finance, debt is preferred to equity because the latter would require the issuance of shares and external ownership of the business.

2.2 Passive learning Model: According to this theory, a corporation does not know how to develop before entering a market; instead, it learns about the distribution of its profits after entering the market based on knowledge from realized earnings. Based on its continual learning, the company may enter, exit, or reduce its presence in the market. This learning theory holds that businesses discover their effectiveness or development potential after they become well-established in the sector. The owner's judgment of efficiency increases as the business matures, lowering the possibility that output will vary much yearly. According to this approach, SMEs and other emerging businesses should see faster and more steady growth rates (Cunningham & Maloney, 2001).

2.3 Life-Cycle Model: The life-cycle model proposes that variations in a firm's growth are correlated with variations in its financial framework and accessibility to capital. Internal sources, personal savings, unofficial investments, family and friends, and other sources are frequently used by emerging enterprises as funding sources. With time, firms learn to deal with the issue of asymmetric information and better access to short-term finance options, including overdrafts from banks and trade credits. External investors may eventually review the company's performance history and creditworthiness as it establishes a reputation. Debt levels may increase as a company gets bigger and older because companies may turn to financial institutions for borrowing more

frequently to meet their capital investment needs. A company's borrowing requirements decline as retained earnings increase, and debt as a percentage of total assets declines (Black, 1998).

2.4 Quantity Theory of Credit: According to Richard Werner's Quantity Theory of Credit, the purpose of a loan will determine its Impact on GDP transactions. Suppose lending is focused on consumer borrowing that increases consumption. In that case, consumer price inflation is expected to grow due to an increase in the overall demand for goods relative to the overall supply. This means that banks' financing of business investments in unincorporated and private nonfinancial firms helps the economy flourish more than an investment that is focused on consumer borrowing.

2.5 Classic Microfinance Theory of Change: Dunford proposed the classic microfinance theory of change in 2012. According to Dunford (2012), entrepreneurs use microfinance services to get money and then invest it in micro businesses. Second, they manage these micro enterprises to provide a sufficient return on investment and raise household income and consumption, reducing poverty. The relevance of this theory on job creation is that providing micro-credit to SMEs can create enough money to help them grow into large-scale businesses that employ people. As a result, microfinance institutions are essential in this theory because they provide critical financing for SMEs to expand in terms of production and factor inputs. According to Dunford (2012), many people utilize microfinance to lower their sensitivity to (manage the risk of) household consumption interruptions and financial shocks. People employ various measures to lessen their vulnerability, including enterprise investment. This theory is in line with what development economists believe. They agreed that improving access to finance is critical to lowering income inequality and increasing household income and employment for the poor and hard-core poor worldwide. Access to credit improves clients' and their families' ability to boost income-generating and job options, resulting in higher household income and asset value.

B. Employment theories

2.6 Classical Theory of Employment

According to the classical view of employment, the relationship involving the demand and supply of labor in a labor market—in which employees consistently produce a supply of labor while employers generate demand for it—defines employment

for workers. Classical economists held that changes in wages and prices were necessary to bring about full economic employment and that any departure from this trend was unusual (Shraddha, 2018).

2.7 Keynes' Theory of Employment:

Keynes believes a country's employment level is determined by the size of the effective demand for goods and services. The cause of unemployment is a lack of sufficient demand. It is crucial to note that Keynes' theory only holds in the near run under the assumption that the labor force, population, and other variables remain constant. Keynes once asserted that it is useless to provide a long-term theory since "in the long run, we are all dead." As a result, it is possible to assert that employment is directly related to national wealth or productivity.

3. Empirical Literature:

A range of studies have been undertaken to investigate the influence of SME credit access on employment generation, and each has reached its conclusions. Some of these studies were focused on foreign literature, while others were focused on domestic literature. Each study's findings support or deny several underlying debates about the triad's conceptual connections. This section examines empirical studies conducted by international and domestic researchers, highlighting their findings, conclusions, and existing gaps. For example, Tran, Doan, and Tran (2021) examined how access to credit affected the growth of SME employment across 15 developing Asian countries from 2007 to 2016. The study employed the generalized method of moments (GMM) as the estimate strategy in order to solve issues with dynamic panel bias and endogeneity. According to the study, improved access to capital supports the growth of SMEs' employment opportunities. Furthermore, it appears from the findings that while government ownership has minimal impact on job development, expanding domestic and foreign ownership of SMEs enhances the favorable effects of access to credit.

Nakagawa (2021) investigated how Malaysia's government's SME support schemes affected job growth. The study employed the instrumental variables method to address the self-selection issue and calculate the efficacy of the government's SME financing programs from 1999 to 2015. The study showed that DFI funding does not lead to the creation of new jobs. Contrarily, spending money on fixed assets was associated with the growth of SME employment. Ahmed (2020) examined how SMEs may support Somalia's economic

growth and job creation. The study employed a quantitative and descriptive research methodology to gain insight into the variables. According to the study's findings, Somalia's small and medium-sized enterprises will benefit from the government's implementation of effective policies for the expansion of SMEs, provision of access to capital through banks and major corporations, provision of sufficient knowledge and skills, and provision of knowledge and skills.

In their own study, Kumar (2017) used a qualitative research design to assess the effect of targeted SME support on employment in low-income countries. According to the study's findings, small businesses must be given the resources they need in order to expand in order to be able to create jobs. Moreira (2016) examined the microeconomic effects of increased access to financing on the expansion of SMEs in the Czech Republic. The study comprised a sample of 1327 businesses and used a multiple regression econometric model. Based on the study's findings and the empirical analysis that supported them, it can significantly increase Europe's growth, wealth, and employment rates by improving government regulations and increasing finance accessibility for SMEs.

Asdrubali and Signore (2015) looked at the economic effects of the EU Guarantees on Credit to SMEs in Central, Eastern, and South-Eastern European (CESEE) countries from 2005 to 2012. The study combines propensity scores and difference-in-differences estimation to assess the effects of having received a MAP-guaranteed SME loan on business performance to a control group of comparable firms. According to the study, beneficiary firms were able to increase their workforce by 17.3% in the first five years after the guaranteed loan was issued in comparison to the control groups, demonstrating that the EU SME Guarantee Facility (credit) in the CESEE region had, on average, a significantly positive impact on firms' employment. Harash, Al-Timimi, and Alsaadi (2014) used qualitative analysis to examine how funding affected the performance of SMEs in Iraq. The study's findings indicate that small and medium-sized firms (SMEs), which typically have significantly greater job growth rates, need help getting funding.

Domestically, Ola and Onyejiuwa (2021) studied how Nigerian unemployment is impacted by microfinance bank performance. Annual time series data covering the period from 1992, when microfinance institutions first appeared, through 2016 were used in the

study. The residual-based co-integration test and the Autoregressive Distributed Lag (ARDL) estimate method were employed in this study. The results showed a long-run equilibrium link between microfinance bank performance and unemployment. Adanlawo, Vezi-Magigaba, and Owolabi (2021) evaluated how small- and medium-sized firm (SME) operations affected job growth and Nigerians' quality of life. A descriptive and interpretive approach to the research was taken. The results of the study showed that, by influencing job creation, SMEs have a significant impact on people's well-being. Additionally, it was found that SMEs are crucial to the growth of the country's economy.

Omotayo, Lawal, and Odeleke (2019) explored how small and medium-sized businesses in Kano State affected the creation of income and jobs. To accomplish its objective, the study used descriptive methods, such as tables and percentages. The study's empirical results showed that small and medium-sized firms statistically significantly influenced employment and income production in Kano State. According to the report, small and medium-sized businesses in Kano State, Nigeria, are the key to increasing income and employment.

The effect of the Bank of Agriculture's (BOA) microloan scheme on the growth of jobs in micro and small companies was studied by Taiwo (2019). Descriptive data, frequency tables, and graphs were utilized in the analysis together with the OECD COTE (Coherence, Objectives, Targets, and Evaluation) Framework for formulating policy. The research claims that because many enterprises that received BOA microloans were survivalists, most could not create employment. In their 2017 study, Amoo, Eboreime, Adamu, and Belonwu examined how private-sector lending affected Nigeria's economic expansion. The study investigates experimentally the regional traits and policy environment that affect the absorptive capacity of credit in the Nigerian economy from 1993: Q1 to 2013: Q4 using entirely modified least squares. The study discovered that credit stimulates growth despite low levels of infrastructure, monetary policy, trade openness, and investment climate.

Okafor (2016) examined the impact of microfinance bank activities on creating jobs in Nigeria from 1993 to 2012. Multiple linear regression models were used in this study to test the hypothesis. The study's conclusions showed that job creation in Nigeria significantly benefited from microfinance

bank activities during the study period. Taiwo and Falohun (2016) investigated the various sources of financing for SMEs in Nigeria and their impacts on the nation's economic growth using a qualitative study technique. The paper claims that by receiving financial support, SMEs will be able to significantly speed up development in the nation as a whole and contribute to creating jobs and income.

Furthermore, Oyeniran (2015) employed an autoregressive distributed lag technique to examine how SMEs impacted Nigeria's economic growth between 1981 and 2013. The study's conclusions show that investing in SMEs has significantly and favorably impacted the nation's economic expansion. Ilegbinosa and Jumbo (2015) examined SMEs' contribution to the Nigerian economy's expansion between 1970 and 2012. To do this, the study employed secondary data from records of statistics from 1975 to 2012 and primary data from 84 SMEs. In order to estimate the data collected throughout the research period, the ordinary least square, co-integration, and error correction models were used. The results showed that while interest and inflation rates negatively and positively impact growth, SMEs' access to capital positively correlated with economic growth. In an earlier study, Ogbuabor, Mba, and Orji (2014) examined the trend in lending to SMEs from 1992 to 2011 and the impact of financing to SMEs on Nigerian economic growth in a different study. According to the results based on the ordinary least squares method, lending to SMEs accelerates Nigeria's economic development rate. Others studies that have investigated the relationship between access to credit and enterprise performance include; Nwosu et al (2020), Nwosu and Orji (2017 and 2016), among others.

Conclusively, the majority of the studies reviewed (see Amoo, Eboreime, Adamu, & Belonwu, 2017; Taiwo & Falohun, 2016; Ogbuabor, Mba, & Orji, 2014; Oyeniran, 2015) examined the influence of SME credit access on economic growth and development, while others looked at the Impact of SME credit access on SME performance, the Impact of SME performance on job creation, and the Impact of SME performance on economic growth. Meanwhile, only few studies (see Taiwo, 2019; Okafor, 2016) have looked into the effect of SME credit access on employment generation. This study backs up the few other studies that have been done and add to the literature by determining the Impact of SME credit access on employment generation.

In addition, most of the studies reviewed used primary data and descriptive analysis methods to model the Impact of SME credit access on employment generation in Nigeria. As a result, there is a modeling gap from a macro perspective. To this end, this study used secondary data and an econometric model, specifically an ARDL model that accounts for dynamic lags, to investigate the Impact of SME credit access on employment generation in Nigeria.

Furthermore, according to the previous evaluation of the empirical literature, research has yet to examine whether there is a long-term relationship between SME credit access and employment generation in Nigeria. This study empirically analyzed the co-integration trends using the ARDL Bounds test to determine any long-run relationship between SMEs' credit access and employment generation in Nigeria. This study therefore, contributes to the expanding body of domestic empirical studies that future scholars can access and apply the findings to the Nigerian economy. Thus, this study combines recent data with findings from other studies to critically evaluate how SME credit access affects employment generation in Nigeria.

3. Data and Methodology

The data for this study concentrated on the period from the first quarter of 1991 to the fourth quarter of 2020 and were sourced from the Central Bank of Nigeria Statistical Bulletin and World Bank World Development Indicators.

To analyze the relationship between SME access to credit and employment generation in Nigeria, the paper specifies the following model:

EMP = F (CBLSME, CPS, FDI, GFCF, MO, INTRL)-

Where:

EMP=Employment to Population ratio, CBLSME=Commercial bank loan to small scale enterprises, CPS=Private sector credit, FDI=Foreign Direct Investment, LGFCF=Gross fixed capital formation, LMO=Manufacturing Value Added**,** INTRL=Lending interest rate

In order to achieve the objective of this study, this empirical study adopts a multivariate regression model. Furthermore, this study employs an autoregressive distributed lag (ARDL) bounds testing approach to co-integration as first proposed by Pesaran and Shin (1999) and later modified by Pesaran et al. (2001). An ARDL model estimates the dynamic relationship between dependent and explanatory variables. The choice of the ARDL approach in this study is based on its flexibility, which means it can be applied when the variables are in different orders of integration (Pesaran & Pesaran, 1997), specifically when the variables are integrated of I(0) and I (1). According to Pesaran et al. (2001), it can also be used in investigations with small sample sizes. The ARDL technique also allows for simultaneous estimation of the model's long-run and short-run parameters. However, to estimate an ARDL model, we must first ascertain the time-series properties of the variables to know if the ARDL technique for co-integration is suitable. The following steps are necessary:

(a) A unit root test to ascertain the order of integration of the variables

(b) Bounds test for co-integration to determine the long-run relationship among the variables. This will also address one of the objectives of this empirical study.

(d) Estimate a short-run or long-run ECM model based on no co-integration or co-integration of variables, respectively

The long run model is further specified as:

$$EMP = \alpha_0 + \alpha_1 \mathrm{EMP}_{t-1} + \alpha_2 CBLSME_{t-1} + \alpha_3 CPS_{t-1} + \alpha_4 FDI_{t-1} + \alpha_5 LGFCF_{t-1} + \alpha_6 LMO_{t-1} + \alpha_7 INTRL_{t-1} + \mu$$

The short run ARDL model can be specified as follows:

$$\Delta \mathrm{EMP}_t = \alpha_0 + \sum_{i=1}^{p} \theta_{1i} \Delta \mathrm{EMP}_{t-i} + \sum_{i=0}^{p} \theta_{2i} \Delta \mathrm{CBLSME}_{t-i} + \sum_{i=0}^{p} \theta_{3i} \Delta \mathrm{CPS}_{t-i} + \sum_{i=0}^{p} \theta_{4i} \Delta \mathrm{LFDI}_{t-i} + \sum_{i=0}^{p} \theta_{5i} \Delta \mathrm{LGFCF}_{t-i} + \sum_{i=0}^{p} \theta_{6i} \Delta \mathrm{LMO}_{t-i} + \sum_{i=0}^{p} \theta_{7i} \Delta \mathrm{INTRL}_{t-i} + \Phi\, ECM_{t-i} + \nu_t$$

Where:

Θ_{1i}, Θ_{2i}, Θ_{3i}, Θ_{4i}, Θ_{5i}, Θ_{6i} and Θ_{7i} = ARDL short-run parameters for the explanatory variables.

Δ and ν_t = Short-run operator & short-run error term, respectively.

ECM_{t-i} = Error correction term generated from the long-run equilibrium relationship.

Φ = The parameter of ECM_{t-i} indicating the speed-level of adjustment to equilibrium after a shock.

4. Empirical Results

4.1 Unit Root Test

As stated in the preceding section, the unit root test is conducted to check the stationarity properties of the variables used in this study, that is, the behavior of the variables over time. Below is the hypothesis and decision rule to carry out this test.

H_0 = Unit root problem (It is not stationary)

H_1 = No unit root problem (It is stationary)

Decision Rule: Reject $H0$ if |ADF t-statistic| > |critical value| at a 5% significance level. Otherwise, do not reject. Alternatively, $H0$ can also be rejected if the p-value of the Augmented Dickey-Fuller (ADF) is less than 0.05 at a 5% significance level.

Table 4.1

Augmented Dickey-Fuller unit root test results

Variables	ADF test statistic	t-Statistic	P-value	Order of integration	Decision	
EMP	-2.221639	-1.943563	0.0259	I(1)	Stationary	
CBLSME	-4.526762	-2.88629	0.0003	I(0)	Stationary	
CPS	-5.443103	-2.886074	0.0000	I(1)	Stationary	
LFDI	-3.21677	-2.885863	0.0214	I(0)	Stationary	
LGFCF	-3.680762	-3.449716	0.0277	I(0)	Stationary	
LMO	-3.699873	-2.886074	0.0052	I(1)	Stationary	
INTRL	-3.174056	-2.888932	0.0243	I(1)	Stationary	

Source: Author's construct using EViews' output Note: Test critical values at a 5% level of significance

The results of the ADF's unit root test, shown in Table 4.1 above, reveal that all of the variables are stationary and have no unit root. Other variables become stationary after being differenced once, with the exception of commercial bank loans to SMEs (CBLSME), the log of foreign direct investment LOG(FDI), and the log of gross fixed capital formation LOG(GFCF), which are stationary at levels. This could indicate co-integration as well as a dynamic interaction between the variables. According to Pesaran et al. (2001), one of the underlying criteria for the estimation of an ARDL model is an admixture of orders of co-integration or stationarity. Hence, the observation of the

order of stationarity in the above result satisfies the condition upon which this study was conducted.

4.2 Bounds Test for Co-Integration

According to Gujarati (2013), economic theory is frequently represented in equilibrium, and two or more variables are said to be co-integrated if they have a long-term or equilibrium relationship. As a result, a co-integration test is used to determine whether two or more variables that are not stationary at their level of form have a long-term relationship. Following a key underlying conditional satisfaction of an admixture of stationarity orders, this study uses Wald's bound test for co-integration.

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

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

Decision Rule: Reject H_0 if f-statistics > upper critical boundary at 5% level of significance. Otherwise, do not reject and conclude that there is no stable long-run relationship.

Table 4.2: Bounds Test for Co-Integration Result

Test Statistic	Value	Signif.	I(0)	I(1)	Result
F-statistic	3.673481	10%	1.99	2.94	
		5%	2.27	3.28	Co-Integrated
		2.50%	2.55	3.61	
		1%	2.88	3.99	

Source: Researchers' construct from Eview's output

From Table 4.5 above, the f-statistic of the Wald test is greater (>) than the lower and upper critical boundaries at the 5% level of significance. Hence, we reject the null hypothesis and conclude that there is co-integration among the variables used in this study. That is, a stable, long-term relationship exists. Thus, this study estimates the long-run and short-run models. Also, to account for a specific time of adjustment, an ECM model is also estimated.

4.3 Presentation of Estimation Results:

Table 4.3: Long Run Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CBLSME	0.030386	0.01444	2.104334	0.0378

CPS	0.000461	0.00009	5.101919	0.0000
LFDI	-0.079262	0.458115	-0.173018	0.8630
LGFCF	4.66155	2.301971	2.025025	0.0455
LMO	3.737722	2.141022	1.745766	0.0839
INTRL	0.025609	0.114169	0.224303	0.8230
C	31.304286	18.348976	1.706051	0.0911
R-squared=0.798459		F-statistic=4048.86		Durbin-Watson stat=1.944075
Adjusted R-squared=0.798212		Prob(F-statistic)=0.000000		

Source: Researchers' construct from Eview's output

Table 4.3 shows that commercial bank loans to SMEs have a long-run coefficient of 0.030386 and are statistically significant at a 5% significance level. As a result, holding other variables constant, a 1% increase in CBLSME increases employment generation (EMP) by 0.030386% on average. The regression result shows that CBLSME has a positive relationship with EMP, and this conforms to a priori expectation. This result is in line with that of Olaoye, Adedeji, and Ayeni-Agbaje (2018), who discovered that commercial bank loans to SMEs have a favorable influence on job creation in Nigeria. By rational expectation, SMEs' ability to purchase more human capital, physical capital, raw materials, meet overhead costs, and working capital, among other factors, grows as commercial banks lend more money to them. Hence, employment is generated. Although given the CBN directive to commercial banks to issue loans to small businesses, its effect still needs to be felt, as shown by the low magnitude of CBLSME in the regression result. The small coefficient of CBLSME has revealed commercial banks' inadequate attitude toward making loans to SMEs and may have resulted in a low level of job creation by SMEs. This has had a detrimental influence on average capacity utilization, increasing Nigeria's already tight unemployment situation. While commercial banks are supposed to help SMEs overcome some of their financial issues, the truth is that they are profit-driven and may need to be able to provide long-term loans with depositors' funds that are primarily short-term.

Similarly, credit to the private sector (CPS) has a long-run coefficient of 0.000461 and is statistically significant at a 5% significance level, as shown in Table 4.3. This means that a unit rise in CPS will increase employment generation by 0.000461 units

on average, assuming all other factors remainwith employment generation, consistent with a priori constant. The regression result shows that CPS has aexpectations. This finding is consistent with positive relationship with EMP, which conforms to aUgochukwu and Chinyere (2013), who found that priori expectations. Intuitively, as private sectorgross fixed capital formation positively impacts job credit expands, small businesses can get loans,creation in Nigeria. Theoretically, new and allowing them to purchase new production items andadditional investment increases the aggregate improve their performance, ultimately resulting indemand in the economy, invariably increasing employment. This result is consistent with theemployment.

findings of Yakubu and Affoi (2014), which foundIn the result of Table 4.3 above, R^2 is 0.798459. This that credit to the private sector has a beneficialmeans that the explanatory variables used in the impact on job creation. model account for about 79.8% of variations in the Furthermore, Gross fixed capital creation has a long-explained or dependent variable. This passes the run coefficient of 4.66155 and is statisticallygoodness of fit test. Hence, the model is robust. Also, significant at a 5% significance level, as shown inthe probability value of the f-statistics is 0.0000**,** Table 4.3. As a result, a 1% increase in GFCFwhich is < 0.05 @ 5% significance level. Thus, this increases employment generation (EMP) bystudy concludes that the model's variables are jointly 4.66155% on average, given that all other variablessignificant. While the Durbin-Watson value of remain constant. The regression results suggest that1.944075 shows no sign of serial correlation and gross fixed capital formation positively correlatessuggests, the model is not spurious.

Table 4.4: Short Run & ECM Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EMP(-1))	0.583107	0.08646	6.744254	0.0000
D(EMP(-2))	0.152375	0.087448	1.742461	0.0845
D(CBLSME)	0.006583	0.001993	3.302517	0.0013
D(CPS)	-0.000162	0.000047	-3.431452	0.0009
D(CPS(-1))	0.000129	0.00005	2.578345	0.0114
D(LFDI)	-0.004325	0.024544	-0.1762	0.8605
D(LGFCF)	0.254344	0.134662	1.888764	0.0618
D(LMO)	2.153031	0.838525	2.567641	0.0117
D(LMO(-1))	-2.01804	0.801877	-2.516646	0.0134
D(INTRL)	-0.013134	0.010397	-1.263258	0.2094
ECM(-1)	-0.054562	0.015969	-3.416821	0.0009
Diagnostic Tests				
Test	F-statistic	Prob. Value		

Jarque-Bera (JB) Statistic	1.053528	0.590513
Heteroscedasticity Test (Breusch-Pagan-Godfrey)	20.33718	0.2054
Autocorrelation Test	0.344491	0.8418
Specification Bias Test (Ramsay test)	2.686003	0.1044

Researcher's construct from Eview's output

The coefficients of the variables in the short run can be found in the model result displayed in Table 4.4. In the table, the proxies for SME credit access, commercial bank loans to SMEs, are positive and conform to a-prior with coefficients of about 0.006583. This shows that even in the short run, holding other variables constant, a naira increase in CBLSME increases employment generation (EMP) by 0.030386 on average. This implies that commercial bank loans to SMEs are an advantage for employment generation.

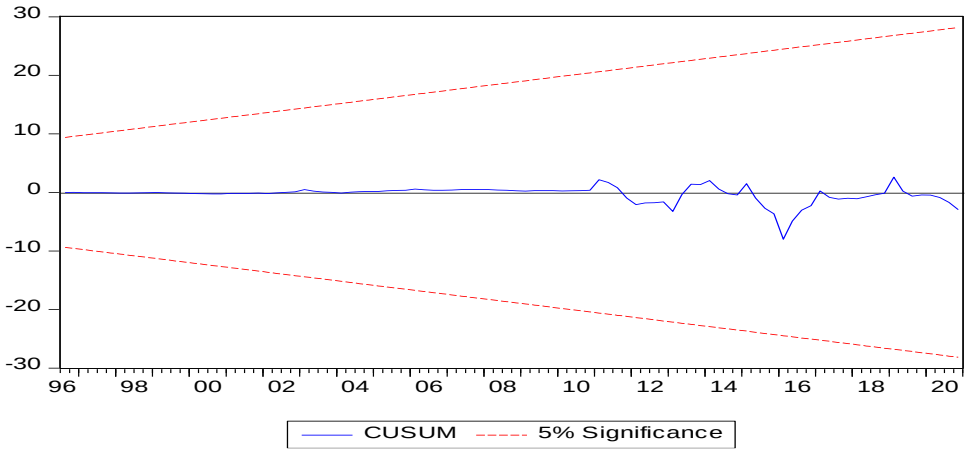
The parameter of the error correction term, which co-integrates the long and short-run effects, has a negative sign, indicating that it is consistent with economic expectations to the degree that it represents the possibility of addressing lags or disequilibrium in the long run. The coefficient of the error correction model is -0.054562. This means that within a quarter, 5% of the model's disequilibrium will be corrected or rectified. The model's disequilibrium will be remedied in about five years.

The diagnostic test also indicates that the error term is normally distributed, there is no serial correlation, no heteroskedasticity, and the model is correctly specified.

4.4 Parameter Stability Test (CUSUM Test)

CUSUM tests of parameter stability plot recursively updated test statistics over time to see if any significant breaks in the statistics may be observed. The results of this test, shown in Figure 1 below, show that all of the estimated model's coefficients are stable over time within the critical boundaries of 5%. We can accept the model's results based on this stability test.

Figure 1: CUSUM Plots for Stability Test



5. Conclusion and Recommendations

Undeniably, the persistent decline formal sector employment and the current unemployment rate pose social, economic, and political issues for the society. For example, a loss of income lowers people's standards of living. It leads to poverty, deteriorates physical and mental health, increases crime, and increases the government's costs for providing benefits like Medicaid, food assistance, and unemployment insurance. (Taiwo, 2019). Hence, this study investigates if there is any long-run relationship between SMEs' credit access and employment generation and the impact of SMEs' credit access on employment generation in Nigeria using the ARDL and bounds-test co-integration approach.

According to the findings, this study reveals that SME credit access positively impacts employment generation in Nigeria. It also proves a short-term and long-term relationship between SME credit access and employment generation. To account for how lengthy the long run is, the study establishes that if employment generation is distorted by

an exogenous shock, it will take around 20 quarters to return to equilibrium.

Therefore, the study recommends that SMEs must be adequately harnessed and supported to attain their maximum potential and capacity utilization. This involves promoting long-term socioeconomic development by encouraging more investment in SMEs and prioritizing their access to credit, infrastructure development, and capacity enhancement. Also, banks should be obliged to offer much-needed funds to SMEs with little or affordable collateral. The government should take regulatory measures to keep commercial banking loan rates low. Furthermore, the government should implement effective monitoring and evaluation mechanism to ensure that development financial institutions meet their mandates and objectives. Finally, the government, chambers of commerce and industry, and other non-governmental organizations should hold regular seminars for potential and existing small and medium-sized firm operators on how to plan, organize, direct, and control their operations to make them more productive as job creators.

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