

## Financial Inclusion, Small and Medium Scale Enterprises and Inclusive Economic Growth in Nigeria (1990-2015)

Abdulrahman Doyinsola Hadiza and Olofin Olabode Philip

Faculty of Social Sciences, Department of Economics,  
Obafemi Awolowo University, Ile-Ife, Nigeria.

Corresponding Author: Abdulrahman Doyinsola Hadiza

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### Abstract

With the purpose of providing more information on the relationship among Small and Medium Scale Enterprises, inclusive growth and financial inclusion in Nigeria, this article examined the role of financial inclusion on the relationship between Small and Medium Scale Enterprises (SMEs) and inclusive growth in Nigeria. Both Fully Modified Ordinary Least Square (FMOLS) and Ordinary Least Square (OLS) methods were employed. Annual data between 1990 and 2015 on inclusive growth, financial inclusion (i.e. credit to private sector, loan of rural branches of commercial banks, total deposit in rural branches of commercial banks, domestic credit, insurance and financial services and loan to agriculture), financial development, savings, rural employment, rural poverty, agricultural value added, per capita income, SMEs and rural infrastructure obtained from the publication of World Development Indicators (WDI) and Nigeria Bureau of Statistics Bulletin, 2015 Editions were used for the study. The results of the study showed that SMEs has a positive and statistical relationship with inclusive growth, while domestic credit, domestic savings, insurance and finance, agricultural loans, credit to private sectors contributed negatively to inclusive growth, except deposit of rural commercial banks, financial sector development and rural infrastructures, rural loans. The results also showed that agricultural loan, insurance and finance, rural loans, domestic savings and credit to private sectors when interacted with SMEs promoted inclusive growth, while the interaction of SMEs with domestic credit, rural deposit, and financial sectors failed to promote inclusive growth in Nigeria. These results were statistically significant.

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**Keywords:** SMEs, Financial Inclusion, Inclusive Growth, OLS, FMOLS, Nigeria

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### INTRODUCTION

Even though, Nigeria is endowed with abundant varieties of natural resources, majority of the Nigerians still live in abject poverty. Nigeria is the largest oil exporter in Africa. Its real gross domestic product (GDP) was estimated to have grown by 6.1% in 2014, owing to continued strong performance mainly in services, but also industry (apart from oil mining) and agriculture. Oil accounts for close to 90% of exports and roughly 75% of the country's consolidated budgetary revenues (World Bank, 2015). Following the recent various attacks on oil sector, GDP from oil and gas was estimated to have declined by 1.3%, relative to a decline of 13.1% in 2013. Couple with the above, is the sharp decline in oil prices since the third quarter of 2014. This has posed serious challenges to the Nigeria's external balance and public finances.

With the North East Boko Haram's threats, and the necessity to meet up with the necessary assistance required for the displaced Nigerians, the need to create productive jobs and payment of workers' salaries, as well as maintaining myriads of problems facing the economy, there is the need for the Nigerian government

to diversify its economy from oil-dependent economy towards private-dependent economy. Among the focused areas where great potentials opportunities are available for the Nigerian economy are agricultural sector; and development of small and medium scale enterprises. These sectors have been recognized to be crucial for economic development of many countries.

According to Ariyo (2008), Small and Medium Enterprises have a propensity to employ more labour-intensive production processes than large enterprises. Consequently, they contribute significantly to the provision of productive employment opportunities, the generation of income, and eventually the reduction of poverty. Their relevant role in stimulating national economy is due to the potentials they exhibit in ensuring diversification and expansion of industrial production as well as accomplishing developmental objectives of any nation. SMEs encourage self-reliance because they mostly use locally sourced raw materials. They have also been noted for their capability of promoting inclusive growth which is noted to be the end-product of economic growth in many countries. Although,

economic growth is considered to be a necessity for any economy of the world, however, recently, people have found that inclusive growth is more of a necessity for a sustainable economy than economic growth. The notion is that, growth that cannot reduce inequality nor reduce unemployment is nothing more than mere increase in figures. According to Sen (2000), poverty is not merely about lack of income, but rather the absence of wide-ranging capabilities such as security, ability to participate equally in the economic and political activities. The paradigm shift towards inclusive growth can be seen from the Approach Papers of the 11<sup>th</sup> Five Year Plan of Government of India 2007-12 and 12<sup>th</sup> Five Year Plan 2012-17. Inclusive growth is about broad based development of the pace and pattern of economic growth. It integrates the issue of unemployment, poverty and inequality with the promotion of economic growth (see Ranieri and Ramos, 2013; Government of India, 2013; Asian Development Bank (ADB), 2013). The major argument behind inclusive growth is that, if the poor is getting benefits without participating in the growth process, inequality will keep on widening. This then informs policy makers focusing on reducing inequality and the need to quantify the trade-offs between alternative policies and growth strategies. Thus, the general consensus is that, growth is good, sustained high growth is better, but sustained high growth with inclusive growth is the best of all since it is considered to be a cursor to poverty reduction which supposed to be the end-product of economic growth.

### **Statement of Problem**

Although, the importance of SMEs on any economy cannot be underrated, various obstacles have been identified as hindering factors to the growth and competitiveness of SMEs in Nigeria. Among these obstacles is financial exclusion. Financial exclusion is the inability of the SMEs to access funds by the business owners as well as individual consumers at the required time. According to World Bank (2005), there are four vital areas of financial exclusion. They include savings, credit, transaction banking, and insurance. Financial exclusion can occur due to inability to access basic financial services because of the following: lack of information, low income, social exclusion, illiteracy, sparse population in rural and inaccessible areas with poor infrastructure and lack of physical access, non-availability of informal credit, administrative bureaucracy, high charges and penalties among others. People that are mostly financially excluded are farmers, landless labourers, unorganized sector, urban slum dwellers, migrants, ethnic minorities and women. According to Enhancing Financial Innovation & Access (EFInA) (2014), 36.9 million adults, representing 39.5% of the adult population in Nigeria, are financially

excluded, only 33.9 million adult population are banked, representing 36.3% of adult population. Financial inclusion has become an important issue of debate across the globe among policy makers, researchers and development oriented agencies. This is because of the belief that it can serve as an important tool for economic development, particularly in the area of poverty reduction, employment generation, wealth creation and improving welfare and general standard of living. According to Adelaja (2003) it was found that access to institutional finance has always constituted a pandemic problem for SMEs' development in Nigeria.

In an attempt to rescue SMEs from financial challenge, Nigerian government has created various institutions, schemes and programmes such as the Nigerian Industrial Development Bank in 1962, Small Scale Industries Credit Scheme in 1971, the Nigerian Bank for Commerce and Industry in 1973 and the Bank of Industry in 2001. From 2002, The Central Bank of Nigeria intervened by establishing several schemes including the Refinancing and Rediscounting Facility, N200 Billion Restructuring/Refinancing Scheme, N200 Billion Commercial Agricultural Credit Scheme in 2009 and the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending in 2011. Aside from this, the government and the Central Bank of Nigeria, other institutions like the World Bank and Nigerian Bankers' Committee have come up with SMEs support schemes such as the US\$41 million World Bank SME I Loan Scheme (1984), World Bank US\$270 million SME II Loan Scheme (1990) and the Small and Medium Enterprises Equity Investment Scheme (2001) by the Bankers' Committee. Recently, there was creation of a program known as Growth and Employment in Wholesale and Retail Sector (GEMS4), supported by UK's Department for International Development, UK Aid, and The World Bank.

Despite all the above, unemployment rate and inequality in Nigeria is still endemic. Most studies on importance of SMEs either concentrate on the impact of SMEs on economic growth or financial development on economic growth, without considering the role of financial inclusion on the relationship between SMEs and inclusive growth especially in Nigeria. More importantly, this study tries to examine the influence of different types of financial inclusion on inclusive growth rather than economic growth which is common to other studies in Nigeria.

### **LITERATURE REVIEW**

SMEs have been one of the noted catalysts for economic growth in many countries. This is because SMEs constitute a major source of income and

employment, and consequently reduces poverty through its contribution to gross domestic product, especially in the area of corporate taxes, export duties and import taxes flowing from their activities (Beck, Demirgüç-Kunt & Levine, 2003). In addition, the role of SMEs towards the performance of any economy has been noted to be multidimensional. For example, in the area of income inequality, it has been noted that it can play a major role in reducing it. According to the SME Finance Forum, SMEs are vital for growth and job creation. It accounts for nearly 86% of employment opportunities in developing countries. According to the World Bank estimates, it has been suggested that, SMEs in the People's Republic of China (PRC) account for 99.9% of the total number of businesses, employ 84% of the nation's workforce, and account for 71% of total sales (World Bank, 2003).

Even though, many studies have affirmed the importance of SMEs to economic growth, studies have noted that its contribution to economic growth can be limited by financial exclusion. There are many studies that linked financial access to economic growth and poverty reduction. According to Levine (2004), developing financial system is highly important in the sense that it contributes to reducing financial information asymmetry, contraction in transaction costs, and this in turn accelerates economic growth. Demirgüç-Kunt and Levine (2008) also discovered that inclusive access to finance is not only pro-growth but also pro-poor reduces income inequality and improves welfare. It was also noted that financial inclusion can contribute to economic growth through value creation of SMEs with positive spill-over effects on improvements in human development indicators such as health, nutrition and education which are important determinants of reduction in inequality and poverty (see Obstfeld, 1994).

According to Guiso, Sapienza, and Zingales (2004) in their study on the effects of differences in local financial development for Italian firms. It was found that financial development enhances the probability of an individual to start his own business, favoring new firms entry, increasing competition, and promoting growth. Their results showed that local financial development is an important determinant of the economic success of an area even in an environment where there are no frictions to capital movements.

In addition, Beck, Thorsten, Demirgüç-Kunt, and Vojislav Maksimovic (2006) examined the relationship between firm size and financial and institutional development and found that firm size is positively related to financial intermediary development, the

efficiency of the legal system and property rights protection. Aside from the above, Beck, Demirgüç-Kunt, Laeven, and Levine (2008) extended the work of Rajan and Zingales (1998) approach. They highlighted another channel through which finance could be linked to growth: removing impediments for small firm and using cross-industry, cross-country data, they showed that industries which are naturally composed of small firms grow faster in financially developed economies (Levine, 2005). Their results show that improvements in financial system can have cross-firm distributional effects, helping small-firms more than large ones. Thus, from their findings it can be deduced that a country's level of financial development exerts a different effect on small firms vs. large ones by removing the growth constraints on small firm industries and accelerating disproportionately the growth of industries, which for technological reasons are composed of small firms (IRIS Center, 2006). According to Alalade et al. (2013), this finance could be generated both internally and externally. The role of finance has also been viewed as a critical element for the development of SMEs by Cook, (2001). It has been widely recognized that lack of sufficient finance and access to credit are the major constraints to the development of SMEs in many parts of the world.

Aside from the above, the study of Thorsten (2007) on the relationship between financial constraints and SMEs in developing countries after using the concept of the access possibilities frontier to explain how difficulties in managing risk and transaction costs involved in SMEs lending noted the importance of finance on the promotion of SMEs. In another study done by Ogujiuba et al. (2004) while investigating the credit availability to SMEs in Nigeria, it was found that finance matters for the response of bank lending to economic shocks and highlights the need for a sound, stable and efficient financial sector to assist SMEs. Furthermore, in the study of Imoughele and Ismaila (2013) on the impact of commercial bank credit accessibility and sectoral output performance in Nigerian economy between 1986 and 2011, it was found that the various commercial bank credit supply has a long-run relationship with sectoral output performance in Nigeria. Also, Afolabi (2013) also investigated the growth effect of SMEs financing in Nigeria, using Ordinary Least Square (OLS) method, found that SMEs output proxy by wholesale and retail trade output as a component of GDP, impacted negatively on economic growth, commercial banks' credit to SMEs were found to be the significant factors enhancing economic growth in Nigeria at 5% critical level. Thus, it was suggested that the government should create an enabling environment for SME development.

**Theoretical Framework**

Having recognized that financial inclusion can spur the performance of SMEs in achieving inclusive economic growth, we can follow Arrow (1962) and Romer (1992) endogenous and learning growth theory, and state our firm production function as:

$$Y_i = AK_i^\alpha L_i^{1-\alpha} \tag{1}$$

where A is the total factor productivity (TFP). Technology A depends on capital stock. The more the capital stock, the more the economy is able to use new technologies.

$$A = RK^{1-\alpha} \tag{2}$$

Where K is the aggregate level of capital stock and R is the learning factor (positive externality). If symmetry is imposed across firms and substituted in the production function, aggregate production becomes:

$$Y = RKL^{1-\alpha} \tag{3}$$

Assuming population, L is constant and equal to 1, the aggregate production will become

$$Y = RK \tag{4}$$

This type of production function shows constant returns to scale. The marginal productivity of capital is constant and equal to average productivity of capital which is R. Given the law of motion of capital as:

$$\dot{K} = sY - dK, \text{ thus, the growth rate of capital}$$

$$\frac{\dot{K}}{K} = s \frac{Y}{K} - d = sR - d \tag{5}$$

Given that  $\frac{Y}{K} = R = \text{const}$   $\tan t$ ,  $\frac{\dot{K}}{K} = \frac{\dot{Y}}{Y}$ .

if  $sR > d \Rightarrow$  the growth rate is positive

$$\frac{\dot{A}}{A} = (1 - \alpha) \frac{\dot{K}}{K} = (1 - \alpha)(sR - d) \tag{6}$$

Contrary to the Solow model, the rate of growth of technology depends on the rate of growth of capital. Technology also affects capital. This then shows that growth is an endogenous process, and an increase in savings implies that growth rate will increase permanently.

To bring in transitional dynamics, If we assume that  $A = R_0 + R_1 K^{1-\alpha}$ , then we have:

$$Y = R_0 K^\alpha + R_1 K$$

and the rate of growth of capital becomes:

$$\frac{\dot{K}}{K} = sR_0 K^{\alpha-1} + sR_1 - d \tag{7}$$

The rate of growth of K is decreasing in K and converges to  $sR_1 - d$

**Model Specification**

Given the above that capital stock is an essential determinant of growth we can state our model of Inclusive growth as:

$$IG = f(FC, pci, finsect, agrpw, rurinfra) \tag{8}$$

Where IG = inclusive growth= rural poor (rupoor), FC = financial inclusion (i.e. domcred, domsav, insurfs, agrlon, bcredprv, ruradepo, ruralon, finsect). domcred = domestic credit, domsav = domestic saving, insurfs = insurance and financial services, agrlon=agricultural loan, bcredprv = credit to private sector, ruradepo = deposit of rural commercial banks, ruralon = loan of rural commercial banks, finsect = financial sector development, pci = per capita income, agrpw = agricultural output per worker, and rurinfra = access to rural infrastructures.

Considering the role of SMEs in the process of achieving inclusive growth and the recent focus of the Nigerian government towards its development, we include SMEs in the equation (8) to obtain equation (9).  $IG = f(FC, SMEs, finsect, pci, agrpw, rurinfra) \tag{9}$

Where SMEs = small scale enterprises.

Considering our objectives two and three, equation (9) and (10) then serve as our regression equations.  $IG = f(FC * SME, finsect, pci, agrpw, rurinfra) \tag{10}$

After linearization and log transformation of equation (9) and (10), we have (11) and (12) regression equation as below:

$$IIG_t = \alpha_0 + \alpha_1 IFC + \alpha_2 ISME + \alpha_3 \ln finsect + \alpha_4 \ln pci + \alpha_5 \ln agrpw + \alpha_6 \ln rurinfra + \mu_t \tag{11}$$

$$IIG_t = \alpha_0 + \alpha_1 IFC * ISME + \alpha_2 \ln finsect + \alpha_3 \ln pci + \alpha_4 \ln agrpw + \alpha_5 \ln rurinfra + \mu_t \tag{12}$$

Where IIG, IFC, ISMEs, lfinsect, lpci, lagrpw, lrurinfra are the log of the variables used.

**METHODOLOGY, DATA MEASUREMENT AND SOURCES**

The study made use of Fully Modified Ordinary Least Square (FMOLS) and Dynamic Ordinary Least Square (DOLS). This is because OLS estimator will only be consistent and have convergence at a faster rate than standard when there is long run correlation (LRCOV) between cointegration equation error or cross-

correlation between cointegration equation error and the regression innovations, otherwise the results of OLS will be biased. Fully Modified Ordinary Least Square (FMOLS) as proposed by Phillips and Hansen (1990) and DOLS as proposed by Saikkonen, (1992); Stock and Watson, (1993) could be used to relax the problem. These estimators are asymptotically unbiased and have fully efficient normal asymptotic, allowing for standard Wald tests using asymptotic chi squared statistical inference.

The following variables were considered in this study.

- ❖ **Inclusive Growth (IG):** This is measured by rural poverty (i.e. agricultural value added per rural worker). Rural poverty is considered to portray inclusive growth as more than 70 percent of Nigerians live in rural areas and obtained their incomes from agricultural output. For most of these rural dwellers, electricity, portable water supply, clinics, health centers, public and private schools and hospitals which are generally concentrated in the urban centers, are illusive luxuries. Large proportion of these rural dwellers lives in a state of nature, bypassed by the modernizing influences and forces, which revolutionize progressive modern societies. This shows that highest level of inequality resides in rural area. Thus, the use of rural poverty as a measure of inclusive growth is justified.
- ❖ **Financial Inclusion (FC):** According to World Bank (2005), financial inclusion includes four vital areas: savings, credit, transaction, banking and insurance. Here, we measured FC using priority lending sectors. Specifically, we use credit to private sector, loan of rural branches of commercial banks, total deposit in rural branches of commercial banks, domestic credit, insurance and financial services and loan to agriculture. In Nigeria, these are bank credits under the directed lending towards the private firms and individuals and they are considered as important parameter that determine the measure of development that can significantly contribute to inclusive growth (Andrea Vaona, 2005).
- ❖ **Financial development:** This is measured by dividing broad money (M2) by GDP.
- ❖ **Domestic savings (SAV):** This is also included as a determinant of inclusive growth and it accounts for the argument that savings propel economic activity in the economy as well as inclusive growth process (Beck, Levine and Loayza, 2000).
- ❖ **Rural employment:** This is measured as the number of people who engage in rural primary sector of the economy. This is included because it is also one of the significant measures of economic development and, consequently, of inclusive growth. A greater level of rural employment can be taken as evidence of greater economic development (Cole Shawn,

2007). Based on this argument, employment in rural primary sector can be added as a determinant of inclusive growth.

- ❖ **Agricultural Production:** This is measured using index of value added. It is included as an important determinant of inclusive growth process in rural area in Nigeria. This is because the largest population of the Nigerians depends, to a great extent, on agriculture, in terms of employment and income generation (see Andrea Vaona, 2005).
- ❖ **Overall credit:** Also, availability of overall credit has been noted to be an important determinant of inclusive growth process (Andrea Vaona, 2005), thus we include credit to gross domestic product (CR) (measured as a ratio in percentage to GDP)
- ❖ **Per capita income (PCI):** Given the fact that increase in per capita income is generally used for measuring standard of living and that it has been used by many studies as a major factor that can promote inclusive growth, we include it in this work (see Andrea Vaona and Roberto Patuelli, 2008).
- ❖ **Small and medium scale enterprises (SMEs):** These are firms or businesses which are small and medium in sizes. According to Esuh and Adebayo (2012), they are firms or businesses operating due to entrepreneurial activities of individual. According to Arowomole (2000), as cited in Esuah and Adebayo (2012), it was affirmed that a single universally acceptable definition of SMEs is difficult especially in Nigeria, hence statistics on the number, size, geographical distribution and activities of enterprises and the SME sub-sectors are partial and highly unreliable (USAID, 2004). According to ADB (2012), "Each country has its own classification system for SMEs but most are classified by paid in capital, average annual turnover and number of employees. Relevant thresholds are typically sector or industry specific, for example, manufacturing, wholesale, retail services, mining, general and heavy construction, and agriculture categories can include micro-enterprises, very small enterprises, small enterprises and medium enterprises, with different thresholds for number of employees, annual turnover, and/or sales receipts or revenues". Based on the Nigeria's national policy on micro, small and medium enterprises and following international criteria of defining SMEs, employment base and asset size are used to group SMEs into micro, small and medium. Accordingly, SMEs in Nigeria is defined as any business enterprise employing less than 10 workers and has an asset base of less than N5 million could be viewed as a micro enterprise. For small scale enterprises, the employment base should be between 10 and 49 with asset base of over N5 million but less than N50 million. Medium scale

enterprises are those that employ between 50 and 199 workers, with asset base of over N50 million but less than N500 million. Specifically, the assets admitted for these classifications exclude land and buildings. In case of conflict of classification between employment and asset size, the policy gives preeminence to the number of employees over asset size. Following this and other studies such as Afolabi (2013), Dada, (2014) and Iloh and Nnanyelugo (2015). This study used output of wholesale and retail data to proxy SMEs.

- ❖ **Rural Infrastructures:** Based on other studies, we use mobile subscriptions to proxy rural infrastructures.
- ❖ All the above data were collected from the publication of World Development Indicators (WDI) and Nigeria Bureau of Statistics Bulletin 2015 Editions.

### DISCUSSION OF RESULTS AND RECOMMENDATIONS

Before the analysis of the data, we first examined the summary statistics of our data both in raw and log form. We discovered that deviation of the data set from the mean is minimal for the variables in log form. This

suggests that they are good for the regression analysis. The results of summary statistics are presented in Table 1 below.

Table 1 Descriptive Statistics of variables (Log Values)

Variable	Obs	Mean	Std. Dev.	Min	Max
Lrupoor	26	- 2.427301	2.796045	-2.96561	-1.78589
Lsmes	26	6.995591	1.00635	4.60517	8.0529
Lndomcred	26	28.00013	1.767411	24.84498	30.71997
Ldomsav	26	2.796045	.5040596	1.50468	3.66184
Linsurfs	26	- .3582136	.8708374	- 2.207275	2.406945
Lagrlon	26	4.09615	1.526074	1.439835	7.534015
Lbcredprv	26	2.631493	.3505654	2.16252	3.64672
Lruradepo	26	8.407178	2.55153	2.981797	12.42237
Lruralon	26	9.790919	1.630601	7.379133	15.06133
Lfinsect	26	2.958802	.4784492	1.59115	3.83816
Lagrpw	26	8.255939	.5709134	7.50598	9.05705
Lrurinfra	23	14.53744	3.927424	9.11041	18.8317

After this, we examine the correlation of our variables. We discovered that they are also good for the analysis in the sense that the level of their correlation is not too high. This result is presented in Table 2 below.

Table 2. Correlation of the Variables used

Lrupoor	1.0000												
Lsmes	0.7443	1.0000											
Lndomcred	0.9362	0.6026	1.0000										
Ldomsav	0.4438	0.3157	0.4000	1.0000									
Linsurfs	0.3790	0.1985	0.4695	0.4063	1.0000								
Lagrlon	0.8541	0.6113	0.9200	0.3656	0.6166	1.0000							
Lbcredprv	0.4044	0.5082	0.4084	0.0880	0.1593	0.2417	1.0000						
Lruradepo	-0.4855	-0.0549	-0.5589	- 0.4743	0.0007	- 0.3422	0.0291	1.0000					
Lruralon	0.6758	0.4858	0.6980	0.3825	0.5486	0.8033	0.1310	- 0.2473	1.0000				
Lpci	0.9577	0.6783	0.9522	0.5733	0.4477	0.9034	0.2796	- 0.5904	0.7323	1.0000			
Lfinsect	-0.0222	-0.3892	0.2246	- 0.3641	0.1412	0.0866	0.3592	- 0.1234	- 0.0215	- 0.0589	1.0000		
Lagrpw	0.9987	0.7608	0.9401	0.4559	0.3888	0.8647	0.4052	- 0.4834	0.6837	0.9638	- 0.0391	1.000 0	
Lrurinfra	0.9902	0.7807	0.9092	0.4423	0.3450	0.8150	0.4531	- 0.4670	0.6414	0.9373	- 0.0598	0.990 1	1.0000

We also checked for the stationarity of our data by testing for the unit root in our data. In the literature, unit root test can be carried out using Dickey-Fuller unit root test, Augmented Dickey Fuller (ADF), Phillip Peron (PPP) unit root test developed by Phillips and Perron (1988). These tests modified the test statistics to account for the potential serial correlation and heteroskedasticity in the residuals. For the purpose of this study, we use GLS-ADF test proposed by Elliott et al. (1996). This is similar to the ADF test. However, prior to fitting the model, the test first transform the actual series via a

generalized least-squares (GLS) regression. Elliott et al. (1996) show that this test has better power than the ADF test. The null hypothesis is a random walk with a possible drift with two specific alternative hypotheses: the series is stationary around a linear time trend, or the series is stationary around a possible nonzero mean with no time trend. In STATA software, the command `dfgls` allows controlling for a linear time trend by default unlike the `dfuller` or `pperron` command. The results of unit root test are presented in Table 3 below.

Table 3. Results of unit Root Test: General Least Square-Augmented Dickey Fuller Test

VARIABLES	LEVEL I(0)	FIRST DIFFERENCE I(1)
LSMES	-1.012	-1.094*
LPCI	-1.343	-1.313*
RUPOOR	-1.799	-1.882*
LDOMSAV	-2.188	-3.101*
LAGRW	-1.754	-1.817*
LBCRDEPV	-2.554	-2.784*
LFINSECT	-2.264	-2.461*
LRURADEPO	-1.905	-2.472*
LRURALON	-2.000	-3.902*
LAGRICLON	-1.132	-1.248*
LINSURF	-1.954	-1.985*
DOMCRED	-2.454	-2.633*

Source: Author's calculation using STATA 12.

\* depicts the stationarity of data at 5% significant level.

After examining the stationarity of our data, we discovered they are I(1) series. Since the use of LRCOV requires the same order of stationarity, this then

necessitate its use. To ensure robust inference, we need to take into account the potential heteroskedasticity and autocorrelation of unknown forms in the data. This requires the long run covariance (LRCOV) matrix estimation such as White heteroskedasticity robust standard errors and Newey–West HAC standard errors. LRCOV has been widely applied to nonstationary time-series analysis, such as the Phillips–Perron Unit-root Test (Phillips and Perron, 1988), Cointegration Tests (Marmol and Velasco, 2004) and Panel Cointegration Tests (Pedroni, 2004), and a model's stability based on Fully Modified Ordinary Least Squares (FMOLS) (Hansen, 1992), canonical correlation regression (CCR) with both I(1) and I(2) variables (Choi, Park, and Yu 1997), Fully Modified Value at Risk (FMVAR), and Fully Modified GMM estimation (Quintos, 1998). This we take into consideration by computing the robust covariance matrix in linear regression. The results are shown in Table 4 below.

Table 4.

Twosided	D.lrupoor	D.lsmes	D.lndomcred	D.ldomsav	D.linsurfs	D.lagrlon	D.lbredprv	D.lruradepo	D.lruralon	D.lpci	D.lfinsect	D.lagrpw	D.lrurinfra
D.lrupoor	0.007	-0.001	0.009	-0.016	-0.019	-0.006	-0.001	-0.014	-0.009	0.001	0.008	0.007	0.041
D.lsmes	-0.001	0.076	-0.018	-0.011	-0.012	0.015	0.03	0.27	0.023	0.012	-0.016	0.001	0.016
D.lndomcred	0.009	-0.018	0.145	-0.118	-0.051	0.044	0.054	-0.043	-0.041	-0.01	0.161	0.009	0.045
D.ldomsav	-0.015	-0.011	-0.118	0.217	0.109	-0.064	-0.045	-0.2	0.039	0.033	-0.143	-0.015	0.094
D.linsurfs	-0.019	-0.012	-0.051	0.109	0.577	0.068	0.025	0.552	0.005	0.025	-0.009	-0.019	0.112
D.lagrlon	-0.006	0.015	0.044	-0.063	0.068	0.151	0.014	0.372	0.072	0.005	0.046	-0.007	0.067
D.lbredprv	-0.001	0.03	0.054	-0.045	0.024	0.013	0.091	0.287	0.019	0.035	0.099	-0.001	0.022
D.lruradepo	-0.014	0.27	-0.043	-0.21	0.552	0.372	0.287	4.797	0.025	0.237	0.164	-0.016	0.135
D.lruralon	-0.009	0.022	-0.041	0.039	0.005	0.073	0.018	0.025	1.405	0.032	-0.027	-0.01	0.058
D.lpci	0.001	-0.011	-0.01	0.033	-0.025	-0.005	-0.035	-0.238	0.032	0.033	-0.043	0.001	0.003
D.lfinsect	0.008	-0.016	0.161	-0.142	-0.009	0.046	0.099	0.164	-0.027	0.043	0.218	0.008	0.047
D.lagrpw	0.007	0	0.009	-0.015	-0.019	-0.006	-0.001	-0.016	-0.01	0.001	0.008	0.007	0.041
D.lrurinfra	0.04	0.016	0.045	-0.093	-0.112	-0.067	0.022	-0.135	-0.058	0.003	0.047	0.041	0.438

To control for other factors associated with economic growth not linked to financial development, the regression results are presented by using a simple conditioning information set, including the constant, the logarithm of all explanatory variables. Due to potential nonlinearities, the natural logarithms of the regressors are considered (Beck, Levine, Loazya and Beck, 2000).

The results of Fully Modified Ordinary Least Square (FMOLS) showed that inclusive growth, domestic credit, domestic saving, insurance and financial

services, agricultural loan, credit of commercial banks to private investors failed to promote inclusive growth. These results were statistically significant. However, the results indicate that SMEs, deposits of rural commercial banks, loan of rural commercial banks, per capita income, financial development sector, output of agriculture per worker and rural infrastructures contributed positively to inclusive growth and the results were statistically significant. When we used Ordinary Least Square (OLS), we also found that inclusive growth, domestic credit, domestic saving,

insurance and financial services, agricultural loan, credit of commercial banks to private investor and rural infrastructures were negatively related. This implies that they failed to promote inclusive growth in Nigeria. However, only domestic credit and loan of rural commercial banks were statistically significant. We also found that SMEs, deposit of rural commercial banks, per capita income, financial sector development, output of agriculture per worker, rural infrastructures were positively related to inclusive growth and the results were statistically significant. The implication of this result is that SMEs, deposit of rural commercial banks, per capita income, financial sector development, output of agriculture per worker, rural infrastructures promoted inclusive growth in Nigeria under the period study. The failure of some indicators of financial inclusion to promote inclusive growth could be linked with the fact that most of this finance is not available to access by the SMEs owners. These results were shown in Tables 5 and 6 below.

Table 5. Combination of FMOLS and OLS Results

	FMOLS	OLS
	IG	IG
Lsmes	0.00846*** (70.49)	0.0110 (0.59)
Lndomcred	-0.00526*** (-32.16)	-0.135*** (-8.32)
Ldomsav	-0.00219*** (-83.42)	-0.00912 (-0.93)
Linsurfs	-0.00693*** (-40.06)	-0.00193 (-0.70)
Lagrlon	-0.00388*** (-23.70)	-0.00248 (-0.30)
Lbcredprv	-0.0280*** (-13.43)	-0.0350 (-1.35)
Lruradepo	0.00628*** (30.54)	0.00285 (1.57)
Lruralon	0.00255*** (24.73)	-0.00400** (-3.77)
Lpci	0.0908*** (57.28)	0.146** (4.40)
Lfinsect	0.0498*** (36.75)	0.144*** (4.82)
Lagrpw	0.947*** (29.56)	0.956*** (19.72)
Lrurinfra	0.00567*** (16.96)	-0.000599 (-0.13)
Linear	-0.0234*** (-79.07)	
_cons	-10.71*** (-47.07)	-7.832*** (-22.03)
N	22	23
t statistics in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

For the joint effect of SMEs and financial inclusion, we interacted SMEs with each of the financial inclusions that we used in the study. The results from FMOLS obtained were different from when they were not

interacted. For example, when SMEs was interacted with domestic credit, deposit of rural commercial banks, financial sector development and rural infrastructures, inclusive growth was reduced, but when it was interacted with agricultural loan, insurance and financial services, loan of rural commercial bank, domestic saving and credit to private sector, inclusive growth was promoted. These results were statistically significant. The findings of this study implies that agricultural loan, insurance and financial services, loan of rural commercial bank, domestic saving and credit to private sector can effectively stimulate the performance of SMEs in the process of poverty reduction.

When OLS was used, the results showed the same pattern except that they were not statistically significant. The results showed that their impact on inclusive growth was minimal. Interaction of SMEs with agricultural loan, domestic credit, insurance and financial services and domestic saving reduced inclusive growth. These results are presented in Table 7 below.

Table 7 Results of joint effect of financial inclusion and SMEs on inclusive growth in Nigeria

	FMOLS	OLS
	IG	IG
Lsmesagrlon	0.00244*** (41.68)	-0.00154 (-0.79)
Lsmeslndomed	-0.00181*** (-58.49)	-0.00194 (-2.06)
Lsmesinsurfs	0.000710*** (67.39)	-0.000466 (-0.57)
Lsmesruralon	0.0000423*** (95.53)	0.000279 (0.83)
Lsmesruradep	-0.000111*** (-10.95)	0.000553 (1.32)
Lsmesdomsav	0.000916*** (34.86)	-0.0000617 (-0.03)
Lsmesfinsect	-0.000215*** (-17.13)	0.00226 (0.51)
Lsmescrpv	0.00152*** (09.52)	0
Lagrpw	1.049*** (34.62)	0.898*** (5.42)
Lrurinfra	-0.000496*** (-32.51)	0.00459 (0.26)
Linear	-0.0171*** (-33.61)	
_cons	-10.64*** (-3.37e+07)	-9.572** (-9.48)
N	22	23
t statistics in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

**FINDINGS, CONCLUSIONS AND POLICY RECOMMENDATIONS**

After the estimation and analysis of this study, the following were the major findings of the study:

- i. SMEs were found to promote inclusive growth in Nigeria.
- ii. All the indicators of financial inclusion used, except deposit of rural commercial banks contributed negatively to inclusive growth.
- iii. Some indicators of financial inclusion such as deposit of rural commercial banks, financial sector development and rural infrastructures, rural loans were found to be essential promoter of inclusive growth.
- iv. Per capita income and agricultural output per worker were also found to be a promoter of inclusive growth.
- v. When SMEs were interacted with agricultural loan, insurance and finance, rural loans, domestic savings and credit to private sectors, they promoted inclusive growth, but when interacted with domestic credit, rural deposit, financial sector, they failed to promote inclusive growth.

In conclusion, the results of the study showed that, all the indicators of financial inclusion, except domestic credit, rural deposit, and financial sector promoted inclusive growth. SMEs were also found to promote inclusive growth. The implication of this result is that, while SMEs could be an important promoter of inclusive growth, it is also necessary to propel its performance by ensuring provision of financial inclusion such as agricultural loan, insurance and finance, rural loans, domestic savings and credit to private sectors.

Based on the findings of this study, it is recommended that various arms of government in Nigeria should continue and intensify their efforts towards promoting small and medium enterprises in Nigeria. The government should also focus more on the policies that ensure financial inclusion in Nigeria. For example, various attempts have been made on restructuring commercial banks in Nigeria in the past. There have been extensions of community banks into many rural areas with the ongoing cashless policy. This has gone a long way in ensuring easy and quick access to funds by rural dwellers.

#### LIMITATION OF THE STUDY

Even though this study intends to make use of primary data to capture inclusive growth since its indicator is multidimensional in nature, we were able to use secondary data due to non-availability of data on inclusive growth for the period studied. Collecting data through questionnaire is very costly and in some cases many of the respondents are not always ready to provide accurate information that can elicit the multidimensional aspect of inclusive growth. This study therefore suggests further studies that will employ both reliable

primary and secondary data to examine the role of financial inclusion on the relationship between SMEs and inclusive growth in Nigeria.

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