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Small and Medium Enterprises and Economic Growth in Nigeria (1999-2017)

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Abstract:

The study examined the effects of Small and Medium Enterprises (SMEs) on economic growth in Nigeria within the temporal scope 1999 - 2017. On the basis of Solow-Swan growth model of the endogenous growth theory, within the framework of neo-classical economics school, the study used Gross Domestic Product (GDP) to proxy economic growth; and SMEs Financing from Commercial Banks (SMEFC), SMEs Financing from Microfinance Banks (SMEFM) and SMEs Output (SMEO) were used as proxies for SMEs with Interest Rate (INT) as control variable. With respect to these proxies, the study employed time-series data, which were sourced from Central Bank of Nigeria (CBN) statistical bulletins, and were estimated using regression analysis, Engle-Granger co-integration test, and Pair-wise Granger causality test. It was found that, SMEs financing (from micro finance banks) and SMEs output (productivity) impact positively on economic growth in Nigeria with the effect of the latter being significant. However, SMEs financing from commercial banks had significant negative effect on economic growth, and the overall model was statistically significant. Furthermore, the study found a long-run relationship between SMEs and economic growth in Nigeria, and a unidirectional causality between them, running from the former to the latter. It was, therefore, concluded that, small and medium enterprises have significant heterogeneous long-run effect on economic growth in Nigeria. Consequently, it was recommended that, policy initiatives that will encourage and ensure that commercial banks, in Nigeria, lend funds to business-oriented individuals and small and medium enterprises should be pursued so that their contributions can be felt in the economy. Not only that, interest rate on loans to SMEs should be set below 2 digits to encourage small and medium enterprises to borrow from commercial banks as well as micro finance banks; and by so doing, SMEs financing will contribute meaningfully to SMEs output, which, in turn, will contribute meaningfully to economic growth in Nigeria.

Keywords: *Small and medium enterprises, economic growth, commercial banks, micro finance banks, SMEs output, interest rate*

1. Introduction

The important role of Small and Medium Enterprises (SMEs) became so pronounced after the global financial crisis of 2007/2008 (Igwe, Amaguo, Ogundana, Egere & Anigo, 2018). The effect of this crisis became a threat to most of the developing countries of the world, especially Nigeria, which is characterized by enormous social economic problems. As a result of this, attention of the government has been drawn to the possible contributions of SMEs to the economy at large. According to Muritala, Awolaja and Bako (2012), there is greater likelihood that, SMEs, when fully recognized, will utilize labour-intensive technologies, thereby reducing unemployment, particularly in developing countries, and thus have an immediate impact on poverty and economic growth.

Small and medium scale enterprises can be explained by the criteria of project costs, capital, number of employees, sales volume, annual business turnover, and financial strength. From the point of view of Federal Ministry of Industry and Commerce, value of installed fixed capital has been adopted to determine what a small-scale industry is. In this respect, the value has varied from N60,000 in 1972, N159,000 in 1975, N250,000 in 1979, to N500,000 in 1986. In 1992, it was reviewed to N2,000,000; and since 2003, it has been N5,000,000. These figures are exclusive of land and buildings, and are subject to government determination and the prevailing objectives of public policy (Ayozie, Oboreh, Umukoro & Ayozie, 2013).

Extant literature has acknowledged the various contributions of SMEs to the growth of an economy. Iromaka (2006) noted that, the contributions of SMEs range from employment generation, increment in the economic output, medium for lessening disparities in income, to developing a collection of skilled and semi-skilled workforce as a foundation for imminent industrial expansion. To Muritala et al (2012), SMEs are, generally, more productive than large firms; and direct government financial support to SMEs can boost economic growth and development. Similarly, it has,

also, been argued that SMEs expansion boosts employment more than large firms because SMEs are more labour-intensive, thereby serving as poverty alleviation tool for achieving the goals of vision 20:20:20 (Imoisi & Jumbo, 2015).

In developed economies like United States of America, China and India, reports show that SMEs contribute to over 55% of Gross Domestic Product (GDP) and over 65% of total employment. SMEs and informal enterprises account for over 60% of GDP and over 70% of total employment in emerging economies, while they contribute to over 95% of total employment and about 70% of GDP in developing economies. In the European Union countries, for example, there are some 25 million small businesses, constituting 99% of all businesses; they employ almost 95 million people, providing 55% of total jobs in the private sector (Keskin, Senturk, Sungar & Kirish, 2010).

Despite the notable contributions of SMEs to the advancement of developing economies, these firms are confronted with a number of limiting factors and challenges due to unavailability of enabling environments. These limiting factors include inadequate capital and inaccessible credit facilities (Onakoya, Fasanya & Abdulrahman, 2013), while some of the challenges from the business environment are corruption, political instability and inefficient legal system; poor infrastructure and lack of quality education; and religion, traditions and customs (Igwe et al, 2018). Similarly, Imoisi and Jumbo (2015) pointed out a mix of internal and external limiting factors as challenges facing the growth of SMEs in Nigeria. These are low capacity utilization, poor planning and management, inflation, poor raw materials management, low standard and poor quality of product, and inadequate marketing skills and techniques, resulting from high cost of advertisement, promotion, branding, canvassing and harsh environment.

In order to mitigate some of these challenges, the Federal Government of Nigeria (FGN) formulated and implemented some policy initiatives, mapped out some strategies and programmes, which are capable of boosting the performance of the SMEs sub-sector. For, in 2003, the FGN established an agency for the development of SMEs in Nigeria—the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) to facilitate and promote micro, small and medium enterprises' access to resources required for their growth and development.

Also, in 2010, the Central Bank of Nigeria established N200 billion Small and Medium Enterprises Credit Guarantee Scheme (SMECGS) to further develop the Small and Medium Investment Scheme (SMEIS) of 1999 with the intention of setting a pace for the industrialization of the Nigerian economy. Other notable initiatives of the Federal Government are: The National Economic Reconstruction Fund (NERFUND), which was established in 1989; National Poverty Eradication Programme (NAPEP), introduced in 2001; National Economic Empowerment and Development Strategy (NEEDS), which was launched in 2004; and the Youth Enterprise with Innovation in Nigeria (YOUWIN) initiative, which was introduced in 2011. According to Sagagi (2006) and Muritala et al (2012), despite the huge amounts spent on the implementation of these initiatives, not much changes and improvements have been achieved.

Consequently, the contributions of SMEs to economic growth has been a subject of discourse among scholars and policy makers; however, several studies, on this subject, only employed primary data with descriptive analysis. As such, in investigating the contributions of SMEs to economic growth in Nigeria, there is dearth of studies with the employment of rigorous estimation techniques. Studies which employed non-rigorous statistical techniques include those of Onugu (2005), Muritala et al (2012), Ayozie et al (2013), Gbandi and Amisah (2014), Imoisi and Jumbo (2015), and Ebitu, Basil and Ufot (2016). As a direct consequence of these, this study was initiated to examine the relative contributions of SMEs to economic growth in Nigeria as well as investigate the long-run and direction of causal relationships between SMEs and economic growth in Nigeria. As such, three research hypotheses were formulated. First, there are no significant contributions of small and medium enterprises to economic growth in Nigeria. Second, long-run equilibrium relationship does not exist between small and medium enterprises and economic growth in Nigeria. Third, there is no direction of causal relationship between small and medium enterprises and economic growth in Nigeria.

2. Literature Review

2.1. Conceptual Clarification

The definitions and classifications of small and medium enterprises differ from country to country. This portrays that, there is no generally accepted definition or classification of SMEs. Different authors, scholars and schools have different ideas, bringing about differences in terms of capital outlay, number of employees, sales turnover, fixed capital investment, available plant and machinery, market share and the level of development (Ogechukwu, 2009). In countries like USA, Britain and other European countries, small and medium scale enterprises are defined in terms of turnover and number of employees (Gbandi & Amisah, 2014).

In Nigeria, the Central Bank of Nigeria (CBN) Communiqué No 69 of the special monetary policy committee meeting of April 15, 2010, also, acknowledged the existence of several definitions of SMEs. From its perspective, any enterprise that has an asset base (excluding land) of between N5 million and N500 million, and labour force of between 11 and 300 belongs to the SMEs sub-sector. This implies that, the CBN Communiqué defines SMEs in terms of capital employed and number of employees. Further to this, small and medium scale enterprise is defined as a business, whose total costs, excluding land, is not more than two hundred million naira (Owolabi & Nasiru, 2017). By this definition, any business whose total cost is not up to N200,000,000 can still be classified as an SME; however, when its total cost exceeds this threshold, the classification of such a business changes.

Small and medium businesses constitute the very foundation upon which the large businesses were built; however, Onakoya et al (2013) acknowledged that, small and medium enterprises have been identified differently by various individuals and organizations, such that an enterprise that is considered small and medium in one place or locality is seen differently in another place. Even, within a country, the definition changes over time. However, to Muritala (2016),

some common indicators employed in various definitions include: total assets, size of labour employed, value of annual turnover, and capital investment. Similarly, Owolabi and Nasiru (2017) opined that, small and medium enterprises (SMEs) vary in definition, ranging from reference to number of employees, value of total assets, value of capital, to value of sales. As a result of the definitional differences across countries, in 2003, the European Union came up with a universally accepted definition, of small and medium-scale enterprises, that, these are companies with less than two hundred and fifty(250) employees; and whose revenues do not exceed 50million Euro (turnover) (Fatai, 2011).

SMEs have been acknowledged to be a positive force to economic growth and development; their important roles have been summarized by Ekanem (2006) to include: ensuring rapid development, increased utilization of local resources, provision of a training ground for indigenous managers and semi-skilled workers, reduction of the rural-urban drift, development of indigenous technology, and raising the living standard of rural dwellers. SMEs account for the largest contributions to economic growth in most developed economies of the world, today; their performance help in the balance of payment position of countries, thus reducing over-dependence on imports relative to their capital investment. Supporting this view, Aremu and Adeyemi (2011) pointed out that, SMEs have been a major intervention in resolving most of the socio-economic challenges faced by developing countries, such as poverty, unemployment and food insecurity, by significantly contributing to employment and income generation, and catalyzing development in urban and rural areas.

Consequently, in all emerging economies, governments have shown a great concern for the development of small and medium-scale enterprises because of the underlying socio-economic problems plaguing the nations. Some of the reasons can be linked to the fact that, past policies failed to generate efficient self-sustaining impetus needed to uplift these countries to the 'take-off' stage of growth. Second, the increased emphasis on self-reliance approach to development. Third, the recognition that dynamic and growing petty-businesses can contribute substantially to a wide range of developmental objectives, ranging from economic growth to development(Ayodeji, Osunkunle & Adesokan, 2015).

On the other hand, economic growth is defined as persistent growth in national income, which translates to increase in the amount of goods and services produced in an economy; as such, growth is said to occur when a country's productive capacity is on the increase (Akpan, 2008). From this point of view, growth is a function of the amount of goods produced in an economy over time, which leads to increase in national income. Not only that, the increase in productive capacity has to be consistent and persistent to qualify for economic growth. Similarly, to Anono and Abubakar (2016), economic growth is the steady process involved in raising the level of output of goods and services in an economy. For economic growth to be meaningful, the rate of growth in productive capacity must be higher than population growth rate, so that there can be improvement in human welfare. Therefore, growth is seen as a steady process of increasing the productive capacity of the economy and hence, increasing national income, being characterized by higher rates of increase in per capita output and total factor productivity, especially labour productivity.

Economic growth can also be seen as the increase in the market value of goods and services produced in an economy over time. Conventionally, it is measured as the percentage rate of increase in real gross domestic product (Osundina & Osundina, 2016). This assertion portends that, economic growth is an increase in national income of a country; and out of the four basic national income measures, persistent increase in real GDP is the commonest measure of economic growth. Other measures are Gross National Product (GNP), Net National Product (NNP), and Per Capita Income (PCI). However, this definition does not consider the end point of economic growth, which is increase in the economic welfare (i.e. well-being) of the people, as it does not relate the rate of growth in real GDP to population growth rate, which gives increase in real per capita income.

Fortunately, one of the means through which increase in productive capacity can be achieved, in any economy, is the contribution of small and medium scale enterprises. Onugu (2005) acknowledged this as one of the reasons why international agencies and organizations are not only keenly interested in making SMEs robust and vibrant in developing countries, but have also heavily invested in them. This is occasioned on the belief that, in promoting the growth of SMEs in developing countries, through advocacy and capacity-building initiatives and continued canvassing for better support structures for operators in the SMEs sub-sector, sustainable economic growth could be achieved. By so doing, most of the socio-economic challenges in developing economies can be eradicated, thus lessening the burdens of these countries on them (the international agencies). These international agencies and organizations include: World Bank, United Nations Industrial Development Organization (UNIDO), International Finance Corporation (IFC), United Kingdom Department for International Development (DFID), and European Investment Bank (EIB).

2.2. Theoretical Framework

The theoretical underpinning of this study is the Solow-Swan growth model, which was independently developed by Robert Solow and Trevor Swan in 1956. It is an exogenous growth model of long-run economic growth within the framework of neoclassical economics. The model attempts to explain long-run economic growth by looking at capital accumulation, labour or population growth, and increase in productivity (commonly referred to as technological progress). Therein, output is produced using two factors of production; namely, Capital (K) and Labour (L), in an aggregate production function that satisfies the lagrangian conditions (which assumes the stability of an economic growth path in a neoclassical growth model), and which implies that, the elasticity of substitution must be asymptotically equal to one.

The theoretical model described above is presented as an equation thus: $Y(t) = K(t)^\alpha [A(t) L(t)]^{1-\alpha}$; where t is time; $0 < \alpha < 1$ is the elasticity of output; $Y(t)$ represents total production; A refers to labour augmenting technology or knowledge; and AL represents effective labour. The Solow-Swan growth model can be expanded to contain variables to capture the endogenous macroeconomic environment like interest rate and economic growth. In line with the nature of

the present study, capital accumulation results from appropriate financing whilst labour input results into output to give productivity.

2.3. Empirical Review

Muritala et al (2012) assessed the impact of SMEs on economic growth in Ogun State, Nigeria. The study adopted survey method; and as such, obtained primary data from 200 small and medium scale entrepreneurial officers and managers in five selected local government areas of the State; namely, Ijebu North, Yewa South, Sagamu, Odeda and Ogun Waterside. It employed descriptive statistics in analyzing data, and found that, the most common constraints hindering small and medium-scale enterprises growth, in Nigeria, are: lack of financial support, poor management, corruption, lack of training and experience, poor infrastructure, insufficient profits, and low demand for product and services. It, therefore, concluded that, SMEs have not made much impact on economic growth in Nigeria.

However, Onakoya et al (2013) evaluated the relationship between SMEs financing and economic growth in Nigeria between 1992 and 2009. The study employed secondary data, which were sourced from Central Bank of Nigeria (CBN) statistical bulletins. It proxied the dependent variable, economic growth, by real gross domestic product, and financing (the independent variable) by interest rate, growth absorptive capacity and loan to SMEs. It employed ordinary least squares estimation technique, and found that, loan to small-scale entrepreneurs has a positive impact on economic growth, while interest rate has a negative impact on it, and therefore, concluded that, SMEs financing impacts on economic growth in Nigeria.

Similarly, Chughtai (2014) examined the impact of small and medium scale enterprises on economic growth in Pakistan from 1981 to 2013. The study used secondary data, which were sourced from World Bank Reports, Asian Development Bank Reports, and Economic Survey of Pakistan of various editions. It built two models, representing effects of process of innovation on SMEs growth, and impact of SMEs on economic growth, separately. It, then, employed ordinary least square method of data analysis, and found that, innovation process has significant positive impact on SMEs growth, and there is strong correlation between SMEs performance and economic growth in Pakistan; and as such, concluded that, SMEs have positive impact on economic growth.

Further to this, Opafunso and Adepoju (2014) examined the impact of small and medium-scale enterprises on economic development in Ekiti State. The study adopted survey research design; and as such, it sourced primary data from 150 respondents, comprising traders, artisans, production/ factory workers and other small and medium enterprises' workers. Accordingly, it employed a multi-stage sampling method to select respondents across the sixteen local government areas of Ekiti State. The study analyzed the data gathered, using chi-square method, and found that, there is a positive and significant relationship between SMEs and poverty reduction, employment generation and improvement in standard of living of people in Ekiti State; as such, it concluded that, SMEs have impacted on economic development of Ekiti State.

Moreover, Imoisi and Jumbo (2015) examined the relationship between small and medium-scale enterprises and economic growth in Nigeria from 1997 to 2012. The study sourced both primary and secondary data: The primary data were sourced from 84 SMEs in Nigeria, while secondary data were sourced from National Bureau of Statistics and CBN statistical bulletins of various editions. It proxied the dependent variable (economic growth) by gross domestic product, and the independent variable (SMEs) by finance to SMEs, interest rate and inflation rate. It, then, used descriptive statistics and ordinary least square method of analysis as estimation techniques, and found that, finance to SMEs has positive relationship with economic growth, while interest rate and inflation rate showed negative and positive influence on economic growth respectively within the period under review.

Furthermore, Oyeniran, Oladipo and Ajayi (2015) investigated the relationship between SMEs and economic growth in Nigeria from 1981 to 2013. The study sourced secondary data from World Bank Development Indicators, CBN statistical bulletins and National Bureau of Statistics. It used gross domestic product to proxy economic growth, and interest rate, inflation rate, investment in SMEs, and credit to SMEs to proxy SMEs. It estimated the time-series data, using autoregressive distributed lag model, and found that, investment in SMEs has a significant and positive impact on economic growth; and both interest rate and inflation rate have positive impact on economic growth. It, therefore, concluded that, there is positive relationship between SMEs and economic growth in Nigeria.

Also, Aminu, Adamu and Ibrahim (2018) evaluated the effects of small and medium enterprises output and financing on economic growth in Nigeria from 1986 to 2016. The study employed secondary data, which were sourced from CBN statistical bulletins of various editions. It used gross domestic product to proxy the dependent variable (economic growth), and SMEs output and bank credit to SMEs to proxy the independent variable (SMEs). It, then, employed regression analysis to estimate the time-series data, and found that, there exists a positive and significant relationship between SMEs output, bank credit and economic growth in Nigeria, indicating that, small and medium-scale enterprises, in Nigeria, make positive contributions towards the development of the nation's economy.

3. Methodology

The study adopted ex-post facto research design; and as such, secondary data were employed and sourced from Central Bank of Nigeria (CBN) statistical bulletins of various editions and National Bureau of Statistics reports, covering the period 1999-2017. Accordingly, economic growth was proxied by gross domestic product, and the independent variable (SMEs) was proxied by SMEs financing from commercial banks, SMEs financing from microfinance banks, and SMEs output, but, interest rate was employed as a control variable. Subsequently, Augmented Dickey Fuller (ADF) technique was used as the preliminary test of stationarity. Further to this, regression analysis, Engle-Granger co-

integration and Pair-wise granger causality tests were employed as the main estimation techniques to respectively test the research hypotheses of the study on the time-series data collected.

3.1. Model Specification

This study employed the Solow-Swan (1956) model of the neo-classical growth theory in examining the contributions of SMEs to economic growth. The standard version of this model seeks to explain the growth rate of aggregate output, based on factors such as capital, labour and technological progress (or the Solow residual). The model is stated thus:

$$Y_t = A_t f [K_t, L_t]$$

Where, in period t , Y_t represents output, K_t represents capital input, and L_t represents labour input. A_t denotes the technology level in the economy or its stock of knowledge and total factor productivity.

Being an adaptive model, capital accumulation was replaced with SMEs financing, and labour input was replaced with SMEs output; and as such, the following variables were introduced into the model to make room for the contributions of SMEs with the control variable. These are SMEs financing from commercial banks, SMEs financing from microfinance bank, SMEs output, and interest rate. Thus:

$$GDP = f(SMEFC, SMEFM, SMEO, INT) \quad 1$$

In an explicit form, the model is stated as:

$$GDP_t = \beta_0 + \beta_1 SMEFC_t + \beta_2 SMEFM_t + \beta_3 SMEO_t + \beta_4 INT_t + \mu_t \quad 2$$

In order to bring all the variables to linearity, since they are not in the same parenthesis, logarithms were introduced, and the model is stated thus:

$$\log GDP_t = \beta_0 + \beta_1 \log SMEFC_t + \beta_2 \log SMEFM_t + \beta_3 \log SMEO_t + \beta_4 INT_t + \mu_t \quad 3$$

Where: GDP= Gross Domestic Product, SMEFC = Small and Medium Enterprises Financing from Commercial Banks, SMEFM= Small and Medium Enterprises Financing from Microfinance Banks, SMEO = Small and Medium Enterprises Output, INT=Interest Rate, μ = stochastic error term.

4. Results and Findings

The study conducted a stationarity test on the variables in the model to investigate whether the series contains unit roots; this was done using Augmented Dickey Fuller (ADF) approach. The null hypothesis of the Augmented Dickey Fuller test is that, the variables in the series are non-stationary, that is, there is the presence of unit's root in the series. Accordingly, results show that, all the variables, in the series, were not stationary at level, $I(0)$, but all became stationary at first difference, $I(1)$; hence, the null hypothesis of the ADF test was rejected, and the alternate hypothesis was accepted, as it states that, the variables in the series are stationary. The rejection of the null hypothesis is based on MacKinnon (1996) critical values. The lag length was selected based on Schwartz Information Criterion (SIC), which ranges from lag zero to lag three. The results are presented in Table 1 below

Variable	ADF Statistic	Critical value	DW	Lag	Inference
LGDP	-4.7931	-3.0655	1.90	1	I(1)
LSMEFC	-6.1258	-3.0655	1.71	1	I(1)
LSMEMF	-4.6805	-3.0810	1.98	1	I(1)
LSMEO	-7.6673	-3.0655	2.14	1	I(1)
INT	-5.1751	-3.0655	2.30	1	I(1)

Table 1: Results of Augmented Dickey Fuller (ADF) Stationary Test

Source: Author's Computation, 2018

4.1. Regression Test and Interpretation

The study regressed gross domestic product against SMEs financing from commercial banks, SMEs financing from microfinance banks, SMEs output, and interest rate within the period under review, and the results are presented in Table 2 below. It was discovered that, the coefficient of determination (R^2) stood at approximately 0.9302, which indicates that, a change in gross domestic product is explained, to the tune of 93.02%, by the independent variables (SMEFC, SMEFM, SMEO and INT) while the remaining 6.98% variations are accounted for by other factors (i.e. variables) not captured in the model. The adjusted R^2 , of approximately 90.70%, shows that, R^2 indicates the true behaviour of the dependent variable (LGDP) in relation to changes in the independent variables, thus implying the goodness of fit of the model.

Essentially, F-statistic was used to test for the significance of the whole model, and results show that, F- calculated value, of 40.03, is greater than F- tabulated value, of 2.98, at 5% level of significance. This is a clear indication of the fact that, the whole model is statistically significant; hence, the overall null hypothesis was rejected, and the overall alternate hypothesis was accepted: The acceptance of the alternate hypothesis was based on the fact that, it indicates that, there are significant contributions of small and medium scale enterprises to economic growth in Nigeria. In addition, the study revealed that, the coefficients of SMEFM (SMEs financing from micro finance banks), SMEO (SMEs output) and INT (interest rate) are positive, standing at 0.074286, 0.575944, and 0.001585 respectively. Only SMEO is statistically significant, as its p-value is less than 0.05 (p-value of 0.0008), while SMEFM and INT respectively have p-values of 0.4973 and 0.9519, which are greater than 0.05. However, SMEFC has a negative coefficient, standing at -0.504396, but it is statistically significant, as its p-value, of 0.0113, is less than 0.05, that is, 5% level of significance.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LSMEFM_	0.074286	0.106135	0.699917	0.4973
LSMEFC	-0.504396	0.168698	-2.989924	0.0113
INT	0.001585	0.025751	0.061566	0.9519
LSMEO	0.575944	0.129763	4.438435	0.0008
C	11.33692	2.226385	5.092077	0.0003
R-squared	0.930285	Mean dependent var		10.0269
Adjusted R-squared	0.907047	S.D. dependent var		1.01771
S.E. of regression	0.31028	Akaike info criterion		0.73725
Sum squared resid	1.155285	Schwarz criterion		0.98231
Log likelihood	-1.266592	Hannan-Quinn criter.		0.76161
F-statistic	40.03257	Durbin-Watson stat		1.60549
Prob(F-statistic)	0.000001			

Table 2: Summary of Regression Estimates

Source: Author's Computation, 2018

4.2. Engle-Granger Co-integration Test

Table 3 presents the results of the co-integration test, using residual based approach. It examines the combined movement of the variables in the long-run, following the methodology of Engle-Granger (1987). The estimation results provide evidence of statistical long-run relationship between the variables; namely, gross domestic product, SMEs financing from commercial banks, SMEs financing from microfinance banks, SMEs output, and interest rate. As shown in Table 3 below, there exists evidence of long-run relationship between the variables of study with Trace and Max-Eigen values, having p-value of 0.0012, which is less than 0.05 (i.e. 5% level of significance) at both trace statistic and Maximum Eigen values. Therefore, the null hypothesis, which states that, long-run equilibrium relationship does not exist between small and medium enterprises and economic growth in Nigeria, was rejected, and the alternate hypothesis was accepted.

Engle-Granger Test Statistics				
Testing Hypothesis	Trace value	Critical value [prob]**	Max-Eigen value	Critical value [prob]**
None*	10.5182	3.8414[0.0012]	10.5182	3.8414[0.0012]

Table 3: Engle-Granger Co-Integration Test Results

*Denotes Rejection of the Null Hypothesis at 5% LOS. Figures in Parentheses are Mckinnon-Haug-Michelis P-Values (1973)

Source: Author's Computation, 2018

4.3. Granger Causality Test between SMEs and Economic Growth

The Pair-wise Granger causality test shows the direction of causal relationship between one variable and the other. In line with most of the literature on econometrics, one variable is said to granger-cause the other if it helps to make a more accurate prediction of the other variable. Accordingly, the granger causality test results, in this study, show that, there are unidirectional causal relationships thus: SMEFC-GDP (i.e. SMEs financing from commercial banks granger-causes gross domestic product), SMEO-SMEFC (i.e. SMEs output granger-causes SMEs financing from commercial banks), and INT-SMEFM (i.e. interest rate granger-causes SMEs financing from micro finance banks).

The following are the implications of the above results: First, SMEFC granger-causes GDP with a p-value of 0.03 (which is less than 0.05, i.e., 5% level of significance), but GDP does not granger-cause SMEFC, as its p-value is 0.2466 (which is greater than 0.05). Since, the causality runs from the former to the latter alone, and it does not run also from the latter to the former, then, the causality is unidirectional (one-way) and not bi-directional (two-way). Second, SMEO granger-causes SMEFC with a p-value of 0.03 (which is less than 0.05), but SMEFC does not granger-cause SMEO, as its p-value is 0.7728 (which is greater than 0.05); hence, the causality is unidirectional. Third, INT granger-causes SMEFM with a p-value of 0.03 (which is less than 0.05), but SMEFM does not granger-cause INT, as it has a p-value of 0.9203 (which is greater than 0.05); as such, the causality is unidirectional. Therefore, the null hypothesis, which states that, there is no direction of causal relationship between small and medium enterprises and economic growth in Nigeria, was rejected, and the alternate hypothesis was accepted.

Hypotheses	Obs	F-STAT	P-VALUE	Decision	Type of Causality
SMEFC-GDP	14	4.8291-1.6877	0.03-0.2466	Reject Ho	Uni-directional
SMEO-SMEFC	14	4.9376-0.3762	0.03-0.7728	Reject Ho	Uni-directional
INT-SMEFM	14	4.9386-0.1593	0.03-0.9203	Reject Ho	Uni-directional

Table 4: Granger Causality Tests Results Between the Dependent and Explanatory Variables

Source: Author's Computation, 2018

5. Discussion of Findings

The results emanating from this study directly support the theoretical postulations of the Solow-Swan growth model of the neo-classical economics school of thought, which states that, appropriate capital accumulation (financing) and labour productivity (output) would lead to increase in total productivity (i.e. GDP). Accordingly, this study found that, SMEs financing (from micro finance banks) and SMEs output (productivity) impact positively on economic growth in Nigeria; while the effect of the latter was significant, that of the former was insignificant. In addition, it found a significant negative effect of financing from commercial banks on economic growth. This may be due to the fact that, interest rate on commercial banks' loans to SMEs, in Nigeria, is so high that, it cannot encourage the needed growth in gross domestic product (proxy for economic growth) through the SMEs sub-sector.

Basically, the findings of this study are in line with those of Onakoya et al (2013), Chughtai (2014), Opafunso and Adepoju (2014), Imoisi and Jumbo (2015), Oyeniran et al (2015) and Aminu et al (2018), though with slight variations. For, this study found that, the trio of SMEs financing from micro finance banks, SMEs output and interest rate have positive effects on economic growth in Nigeria with only SMEs output being significant. Onakoya et al (2013) found a positive impact of SMEs financing on economic growth but a negative impact of interest rate on the same variable. However, Chughtai (2014), in Pakistan, found positive impact of SMEs output on economic growth, and Opafunso and Adepoju (2014) found a positive relationship between SMEs output and economic growth in Nigeria. While Imoisi and Jumbo (2015) found a positive effect of SMEs financing but a negative effect of interest rate on economic growth, Oyeniran et al (2015) and Aminu et al (2018) found positive effects of both SMEs financing and interest rate on economic growth in Nigeria. Effectively, the findings of this study are partially at tune with those of Onakoya et al (2013), Chughtai (2014), Opafunso and Adepoju (2014), and Imoisi and Jumbo (2015), but are totally at tune with those of Oyeniran et al (2015) and Aminu et al (2018).

The findings of this study, on co-integration test, are also in consonance with the theoretical underpinning of the study, the Solow-Swan growth model of the endogenous growth theory, which expects a long-run relationship between SMEs financing and economic growth. This is due to the fact that, with Engle-Granger co-integration test, the study found a long-run relationship between SMEs financing and economic growth in Nigeria. The implication of this is that, appropriate and adequate financing of SMEs, in Nigeria, would have long-run effects on the nation's economic growth, which is represented by gross domestic product. This is, principally, due to the fact that, effective financing of SMEs would enhance SMEs productivity (output), which would, in turn, have positive effects on the level of industrial production, leading to increased growth rate of gross domestic product.

On granger causality test, the findings of this study conform to the dictates of the Solow-Swan model of the neo-classical economics school, which dictates a finance-growth condition, such that, capital input (i.e. effective financing) would enhance production and/ or productivity, leading to increased gross domestic product. This is based on the fact that, this study found a unidirectional causality between SMEs financing and economic growth in Nigeria, running from the former to the latter; hence, there is finance-led growth between SMEs financing and economic growth in the country.

6. Conclusion and Recommendation

The study examined the effects of small and medium enterprises on economic growth in Nigeria within the time frame of 1999 to 2016. On the threshold of Solow-Swan model of the neo-classical economics school, the study estimated time-series data on gross domestic product (proxy for economic growth) against the proxies of SMEs- SMEs financing from commercial banks, SMEs financing from micro finance banks, SMEs output and interest rate, using multiple regression analysis, Engle-Granger co-integration test, and Pair-wise granger causality test.

First, the study found that, SMEs financing from micro finance banks, SMEs output and interest rate have positive effects on economic growth in Nigeria with only SMEs output being significant. SMEs financing from commercial banks has significant negative effect on economic growth in the country; and the overall model was found to be statistically significant. Looking at these against the implicit a priori expectation from the Solow-Swan theoretical growth model, the study concluded that, SMEs significantly positively contribute to economic growth in Nigeria.

Second, the study found evidence of long-run relationship between SMEs financing and economic growth in Nigeria. Considering this against the implicit a priori expectation of long-run relationship between capital input and productivity in the Solow-Swan growth model, the study concluded that, there exists a long-run relationship between SMEs and economic growth in Nigeria. Third, the study found a unidirectional causality between SMEs financing and gross domestic product in Nigeria. Looking at this against the back drop of finance-growth condition of the Solow-Swan growth model of the neo-classical economics school, in relation to capital input and productivity, the study concluded that, there is a unidirectional causal relationship between SMEs and economic growth in Nigeria, running from finance to growth. Consequently, the overall conclusion of this study is that, SMEs have significant heterogeneous long-run effects on economic growth in Nigeria.

Given the test results on SMEs financing from commercial banks in Nigeria, which shows a significant, negative long-run causal relationship with gross domestic product, it was recommended that, policy initiatives that will encourage and ensure that commercial banks, in Nigeria, lend funds to business-oriented individuals and small and medium enterprises should be pursued so that their contributions can be felt in the economy. Not only that, interest rate on loans to SMEs should be set below 2 digits to encourage small and medium enterprises to borrow from commercial banks as well as micro finance banks; and by so doing, SMEs financing will contribute meaningfully to SMEs output, which, in turn, will contribute meaningfully to economic growth in Nigeria.

7. References

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