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# Entrepreneurship and Economic Growth in Nigeria: Evidence from Small and Medium Scale Enterprises (SMEs) Financing using Asymmetric Auto-Regressive Distributed Lag

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#### Abstract

Small & Medium Scale Enterprises (SMEs) with seamless structures can bring about a significant contribution to the increase in employment generation, the creation of wealth reduction of poverty, durable economic growth and development in many nation across the globe. It is adjudged in some empirical enquiries that SMEs lack access to effective source of finance. This has been identified as one of the major quagmire hindering their contributions to economic growth. The pre-occupation of this study, therefore, is to assess specific financing options available to SMEs in Nigeria and their contribution to economic growth. The paper leans on secondary sources of data which was generated from Central Banks of Nigeria Statistical Bulletin and World Development Indicators (WDI, 2015). Asymmetric auto-regressive distributed lag (AARDL) was employed to determine the asymmetric effect of finance for SMEs on economic growth in Nigeria. The analysis of the results suggests an insignificant direct relationship between positive and negative component of finance for SMEs and Real Gross Domestic Products, this can be adduced to inefficient mobilization of funds to SMEs operators in Nigeria and more so inability of the SMEs operators to operate in economies of scale. The paper recommends that vigorous effort should be made by the government via the financial regulators to ease access to fund and also involve herself in the operation of the SMEs Operators such that funds channeled to them will be efficiently utilized.

**Keywords:** Small & Medium Scale Enterprises (SMEs), Financing Options, Asymmetric Auto-regressive Distributed lag (AARDL) and Economic Growth

#### **1.0 Introduction**

SMEs have been considered as main wherewithal of the economy because of their capacity in propelling productivity and standard of living (Akingunola, 2011). Moreover, Sunusi (2003) states that SMEs are crucial devices of economic development as they account for more than 50 percent of Gross Domestic Product (GDP) of developing economies. According to the author, SMEs are the major source of entrepreneurship and enterprise, and the main source of innovation and technological development; they provide the required human capital and raw materials to larger businesses. Each of these roles is critical for the economic growth and development of a country, (Schumpeter, 1973: Van-Den-Berg, 2001).

In many developing countries, SMEs operate in the informal sector, with weak management systems, poor product quality and standardization, low levels of technology and human resource skills (Baig, 2007). These problems to a large extent contribute to widespread low productivity of SMEs. SMEs are also faced with lack of access to financing and long-term capital, the bases on which businesses operate. Thus, SMEs' denial of access to relative cheap and effective source of finance has been identified as the major component thwarting their contribution to economic growth in developing countries (Boháček, 2006; Beck & Demirguc-Kunt, 2006: ACGA-Canada 2009).

The financial systems of African countries are petite, trivial and expensive, with limited outreach. This is not just limited to financial development indicators, it is also extended to firm and provides data on household with regards to the use of formal financial (Beck & Cull, 2014). In addition, financial system in developing countries and from the African continent in particular witnessed a dramatic changes in the last past two decades in market set up and stability (Abiola, 2012). There are many reasons to believe that huge differences across the African continent starting from well-developed financial set up in middle-income countries such as Mauritius and South Africa, to narrow banking systems offering only the most rudimentary financial services in impoverished countries like the Central African Republic and South Sudan (Dandago & Muhammad, 2014). Small Medium Enterprises are least likely able to secure loans than large firms; however they have rely on internal or private funds in order to launch their enterprise, and as result 50% of formal SMEs don't have access to formal loans. This means that the financial gap is even larger when micro and informal enterprise are taken into account. Overall approximately 70% of all

Micro Small and Medium Enterprises in emerging markets mainly countries of the South lack access to credit, while the gap varies across region; it is particularly very wide in Africa and Asian Countries (Akingunola, 2011). The current total credit interval for both formal and informal SMEs is estimated to be \$ 2.6 trillion (World Bank, 2015).

It is against this backdrop that this paper tries to analyze the asymmetric effect of finance for SMEs on economic growth in Nigeria. In line with this objective, this study seeks to improve on the past studies by making use of a broad data set spanning from 1981 - 2014. The rest of the paper is organized as follows: section II deals with the literature review and theoretical framework, section III contains the model specification and estimation techniques, section IV is the empirical analysis and results, while section V summarizes and concludes the study.

## 2.0 Review of Related Literature

#### 2.1 Brief Theoretical Review

There are numerous theories that are relevant to the discourse on the role played by SMEs to the development of developing countries. To this end, the present study focuses on the classical and the modern theories. The classical theories are built on the works of (Adam Smith 1776: Hoselitz, 1959: Staley & Morse, 1965: Kirzner, 1973: Anderson, 1982), among others. The 'classical' theories point to the advantages of SMEs and argue that SMEs will diminish over time and large enterprises will eventually predominate in the course of economic development marked by the increase in income (Onakoya, et al. 2013). The modern theories are further subdivided into Schumpeter's theory, Schultz theory and Kirzner theory. They advocate that SMEs have two crucial roles to play: The first is to accelerate economic growth through the growth of their output contributions to gross domestic product (GDP), and the second is to reduce poverty through the creation of employment and diversifying income generation activities which will have effects of their generated output growth (Abiola, 2012).

SMEs also have indirect effects on economic growth and poverty reduction through their growth linkage effects (Onakoya, et al. 2013). Output and employment increase in SMEs to the rest of the economy through three main linkages; production (forward and backward), investment, and consumption. It is believed that when these linkages are synergized, the SME sector will contribute grossly to economic growth and development. SMEs in less developed countries are able to enhance competition and entrepreneurship and hence have external benefits on economy-wide efficiency, innovation, and aggregate productivity growth (Abdul-kemi & Idris 2014). They are generally more productive than large enterprises as they can easily adapt to smaller business sphere but restricted financial market access, institutional failures and hostile macroeconomic environment impede SME development. Their operations are majorly labour intensive and hence the capacity to generate employment opportunities than large enterprises (World Bank, 2002, 2004).

#### 2.2 A Review of Empirical studies on SMEs Financing and Economic Growth.

This section covers the underpinning Empirical review of SMEs Financing and Economic Growth.

S/N	Author(s)	Title	Methodology	Findings
1.	Abiola, (2012)	Effects of Microfinance on Micro and Small Enterprises (MSEs) Growth in Nigeria	Panel data and regression analysis	The findings opined that micro- financing as it were in Nigeria, microfinance banks do not enhance growth and cannot guarantee the expansion of micro and small enterprise in Nigeria.
2.	Syed, et al (2012)	The impact of SMEs sector on the development of Pakistani economy	Descriptive statistics, paired sample t-test and Pearson's product moment correlation analysis	The study revealed that SMEs were playing a positive and significant role for the economic progress of Pakistan especially in terms of foreign exchange as outputs were exported.
3.	Abdul-kemi & Idris, (2014)	Entrepreneurship and economic development in Nigeria	Autoregressive Integrated Moving Average (ARIMA) Model	The study provided evidence that SMEs financing has significant impact on the economic development of Nigeria during the period under review especially when there were funding from micro- finance banks.

<b>Fable 1: Summary of finding</b>	and methodology of	of Related Empirical literature
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4.	Olawale & Garwe, (2010)	The obstacles of new SMEs in South Africa	Principal component analysis	The results revealed that apart from constraints of credit availability, the inability of SMEs to understand the dynamism of the market environment in which they operate also contributed to the stunted growth of SMEs.
5.	Abosede & Onakoya, (2013)	Entrepreneurship, economic development and inclusive growth	ordinary least square estimation technique	The findings revealed that apart from the bottleneck of access to capital, SMEs are also limited by their lack of managerial capacity to direct enterprises. They also noted that SMEs will have to survive and guarantee their sustainability first before they can contribute to economic growth of their countries.
6.	Akingunola, (2011)	SMEs and economic growth	Ordinary least square	The study affirmed that there exist a positive significant relationship between SMEs financing and economic growth through investment level.
7.	Fairlie, (2011)	Entrepreneurship, Economic Conditions, and the Great Recession	Ordinary least square	The results point to a consistent picture – the positive influences of slack labor markets outweigh the negative influences resulting in higher levels of business creation. He also found out that the predicted trend in entrepreneurship rates tracks. The actual upward trend in entrepreneurship extremely well in the Great Recession.
8.	Kreft & Sobel, (2003)	Public Policy, Entrepreneurship, and Economic Growth	Granger causality	The findings show that it is the presence of entrepreneurial activity that draws venture funding to an area, and not vice versa.
9.	Dandago & Muhammad, (2014)	Entrepreneurship Development Program and Facilitation of Youth Employment in Kano State, Nigeria.	Ordinary least square	The study found that Entrepreneurship Development Programmes in Kano State lack capacity to support the establishment of entrepreneurial ventures and to produce the desired level of jobs for youth.
10.	Rasool et al. (2012)	Drivers of Entrepreneurship: Linking with Economic Growth and Employment Generation	Panel Data Analysis, stepwise least square	The results explain that Research and Development (R&D) activities affect economic growth both by building up entrepreneurial potentials and skills and by having direct impact through increasing the value added of economic activities on large scale (that is, large scale industries, firms, among others).

Source: Authors' compilation

#### **Summary of Empirical literature**

From the table above, it is crystal clear that the review of empirical studies on SMEs Financing and Economic Growth have diverse conclusions. The methods applied in their analysis are also varied from one another. It is against this backdrop that this study tries to fill the blatant lacuna in literature by taking into cognizance of the partial decomposition of finance for SMEs which is decomposed into positive and negative component of SMEs finance.

#### **3.0 Methodology**

The study utilized secondary sources of data. Annual data which was collected from Central Bank Nigeria statistical bulletins, the data collected was for the period 1981-2014. This include growth rate of real GDP, growth rate of commercial bank loans to SMEs and unemployment rate.

The theoretical frame work adopted in this paper is based on the modern economic theory on SMEs, that SMEs play two important roles, to accelerate economic growth through the growth of their output contributions to GDP, and to reduce poverty through employment creation and income generation effects of their generated output growth.

The Asymmetric Auto-Regressive Distributed Lag (AARDL) by Greenwood-Nimmi and Shin (2003) is adopted in this study so as to examine the effect of increase and decrease in finance on SMEs on economic growth. As such the following linear relationship is specified as;

$$GRGDP = f(GSMEs^+, GSMEs^-, UER)$$

This is explicitly stated as;

(1)

$$\Delta GRGDP = \phi_0 + \phi_1^+ GSMEs_{t-1}^+ + \phi_2^- GSMEs_{t-1}^- + \phi_3 UER_{t-1} + \sum_j^1 \phi_4 \Delta GSMEs_{t-j}^+ + \sum_{j=0}^1 \phi_5 \Delta GSMEs_{t-j}^- + \sum_{j=0}^1 \phi_6 \Delta UER_{t-j} + \mu_{t-1}$$
(2)

Where  $\emptyset_0 - \emptyset_6$  are to be estimated

GSMES = Growth Rate of Commercial Bank Loans to Small and Medium Scale Enterprises

**UER** = Unemployment rate

- : Positive component of the variable

+: Negative component of the variable

 $\mu$ = stochastic error term

#### **3.1 Estimation Techniques**

Pragmatic research in the field of financial economics largely focuses on time series data which have two central properties that is, non-stationarity and time varying volatility. Philips (1986) contended that regression analysis with variables that contain such properties may produce misleading and spurious results thereby causing biased economic analysis. As such, stationarity tests were adopted to examine the order of their stationarity. The linear unit root test adopted to check whether the time series data were stationary or not were Augmented Dickey Fuller (ADF) and Philip-Perron, while the non-linear unit root test were KSS and Solis which is a modification to KSS and was developed by Solis, (2009).

$\Delta y = \alpha y_{r-1} + \sum_{i=0}^{p} \Delta y_{r-i}$	(3)
$\Delta y = \alpha y_{r-1}^3 + \sum_{i=0}^p \Delta y_{r-i}$	(4)
$\Delta y = \alpha_1 y_{r-1}^3 + \alpha_2 y_{r-1}^4 + \sum_{i=0}^p \Delta y_{r-i}$	(5)

**NB:** specification for equation (3) above is for a linear unit toot at first difference, while (4) and (5) are non-linear unit root test at first difference that is, KSS and Solis respectively.

## 4. Analysis and Discussion of Results

#### 4.1 Unit Root Test:

The time series properties of the decomposed variables were ascertained informally through their graph plot as shown in Figure 1 below.

## *G.J.C.M.P.*



**NB**: Line Graphs of Variables adopted in the model. *Authors' computation from Eviews 7* 

#### Table 2: Result of Unit Root Test

Variables	Linear unit root tests				Non-Linear Unit root tests			
	ADF	P-	P-P	P-	KSS	p-value	Solis	p-value
		Value		value	(t-stat)		(F-stat)	
GSMES_M	2.789	$0.0001^{1}$	-5.849	$0.0000^{1}$	6.859	$0.0000^{0}$	119.015	$0.0000^{0}$
GSMES_P	-5.754	$0.0000^{1}$	-5.753	$0.0000^{1}$	8.073	$0.0000^{0}$	112.354	$0.0000^{0}$
GRGDP	-3.361	$0.0199^{0}$	-3.244	$0.0262^{0}$	13.958	$0.0000^{0}$	135.026	$0.0000^{0}$
UER	-5.250	$0.0000^{1}$	-3.874	$0.0059^{1}$	3.0734	$0.0044^{0}$	89.345	$0.0000^{0}$

0- Stationarity of the variables at levels

1- Stationarity of the variables at first difference.

Nb: Unit root hypotheses were tested at 5%.

Source: Authors' Computation from EViews 9.5

#### Table 3: ARDL Bond Test

Wald Test:
Equation: EQ01

Test Statistic	Value	Df	Probability
F-statistic	24.47698	(4, 20)	0.0465
Chi-square	5.907930	4	0.0061

Since F-statistics is greater than Pesaran critical value at 5 % upper bound (4.85) and lower bound (3.79), we may reject the null hypothesis that there is no long run relationship among growth rate of finance for SMEs growth rate of GDPs and lastly Unemployment rate.

Table 4: Short run causality from SMEs Financing Asymmetric to Economic growth

Wald Test: Equation: EQ01			
Test Statistic	Value	Df	Probability
F-statistic Chi-square	0.679503 3.397515	(5, 22) 5	0.6436 0.6389

This suggests that there is no short run causality running from finance for SMEs to growth in Nigeria, meaning that in the short run SMEs Financing does not influence the growth-path of the economy.

Equation: EQ01			
Test Statistic	Value	Df	Probability
F-statistic Chi-square	7.492047 14.98409	(2, 22) 2	0.0033 0.0006

# Table 5: Short run causality from SMEs Financing Asymmetric to Unemployment rate Wold Tast:

There is Short run causality running from SMEs financing to Unemployment rate in Nigerian economy, that is, in short run, SMEs financing reduces Unemployment rate in the country.

### Table 6: Error correction model

Dependent Variable: DGRGDP Method: Least Squares Date: 04/08/16 Time: 16:07 Sample (adjusted): 1984 2014 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C DGRGDP(-1) DGSMES_M DGSMES_M(-1) DGSMES_P DGSMES_P(-1) DUER DUER(-1) ECM(-1)	3.021235 0.143082 0.090412 0.010141 0.008896 0.046409 -0.107672 0.197509 -0.962593	1.638422 0.210600 0.047613 0.010928 0.012518 0.052807 0.052305 0.050757 0.282785	1.843990 0.679400 1.898908 0.927982 0.710664 0.878831 -2.058521 3.891276 -3.403979	0.0801 0.5047 0.0721 0.3645 0.4855 0.3899 0.0528 0.0009 0.0028
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.635386 0.453079 3.956352 313.0544 -79.82913 3.485253 0.008410	Mean depender S.D. dependen Akaike info cri Schwarz criteri Hannan-Quinn Durbin-Watsor	nt var t var iterion ion criter. n stat	0.406979 5.349739 5.859944 6.368778 6.025811 2.133301

Table 6 above shows the AARDL estimation of the model specified in equation 2 above, the result above shows that all the component of finance for SMEs (both positive and negative) have a positive effect on the speed of economic growth in Nigeria. This is consistent with modern economic theory on SMEs, that SMEs have two important roles to play simultaneously: to accelerate economic growth through the growth of their output contributions to GDP, and to reduce poverty through employment creation and income generation effects of their generated output growth. It should be noted, however, that SMEs financing plays an insignificant role to economic growth, this can be adduced to policy inconsistency of government towards SMEs financing.

The model also hypothesized a converse and positive relationship between unemployment rate for current year and lagged year one on economic growth respectively Co-efficient of error correction is significant and negative in sign, which suggest that it will take 93.6% for the model to converge to equilibrium.

The coefficient of determinant, suggests that approximately 64% variation in the dependent variable was explained by the independent variable, the F-test is significant at 5 percent, suggesting that the model is adequate for prediction and

policy analysis. Finally, the Durbin-Watson value of 2.13 suggests that autocorrelation is not a problem.

#### 5.0 Summary, Conclusions and Recommendation

Finance for SMEs is not the only constraint for the establishment and survival of SMEs in Nigeria. Other constrains include exposure to inadequate infrastructural amenities. Emanating from the analysis conducted, this paper concludes that positive and negative component of SMEs financing do not significantly influence economic growth in Nigeria. This suggests that even if Government increases SMEs financing, this is not an important variable in driving growth-path of the economy. However, this paper recommends that, the governments in Nigeria

should make strenuous effort towards increasing the funds for financing SMEs in the commercial and microfinance banking sector. More so, an assortment of agencies and institutions must be formed with a view to protecting and enhancing activities and growth of SMEs. By this, the capacity and capability of SMEs in term of employment generation, contribution to industrial production and its influence on economic growth can be well sensed.

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# Appendix





## Serial correlation test

Breusch-Godfrey	Serial	Correlation	LM Test:
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F-statistic	1.233441	Prob. F(2,18)	0.3148
Obs*R-squared	3.736442	Prob. Chi-Square(2)	0.1544