

IMPACT OF SMALL AND MEDIUM SCALE ENTERPRISE OUTPUT ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study examines the impact of small and medium-scale output on economic growth in Nigeria from 1981 to 2023. Secondary data were used for analysis obtained from WDI, using ARDL Model to analyze the data. Findings from result show that small and medium scale enterprises output has positive and significant impact on economic growth in Nigeria. However, commercial banks credit to small and medium scale enterprises has positive and significant impacts on economic growth in Nigeria. While the lending rate and inflation rate have a negative and significant impact on economic growth in Nigeria. Based on the findings, it's recommended that government should prioritize the development of SMEs through targeted interventions such as tax reliefs, business development services, access to industrial clusters and reduction of bureaucratic bottlenecks.

1. Introduction

The role of small and medium scale enterprises (SMEs) in the development of the economy cannot to be over emphasized. Their contribution to output generation, employment creation and inclusive growth has made them central focus of public policy over the years. Consequently, governments across countries have increasingly directed policy attention towards small and medium scales enterprises. This is partially due to rising dissatisfaction with the outcomes of development policies that prioritize large-scale, capital-intensive, and import-dependent industrial units. In the developed countries, SMEs accounted for a very significant proportion of the share of GDP. For example, in the United States, SMEs accounted for 44% of the total economic activities between 1995 and 2021(US Small Business Administration [SBA], 2022). In the United Kingdom, SMEs account for about 92.9% of all business about 57.8% of GDP in 2020. In Canada, SMEs account for about 98.8% of employers of labor (OECD, 2020). These significantly points to the fact that the place of SMEs

in economic growth process cannot be over emphasized. In Nigeria, the economic subsector of small and medium size businesses is crucial to the country efforts to build and develop its economy.

The country continues to implement workable strategies and initiatives that would lay the groundwork and pave the path for the sustainable growth through the development of SMEs, regardless of the amount of growth experienced throughout the world (Anthony & Arthur, 2008).

Similarly, Nigeria has made it one of its top priorities to develop its industrial base through the establishment, maintenance, and expansion of small and medium-sized businesses in order to achieve economic growth. This has continued to be the focus of different regimes of the Nigerian government over the years. This is against the backdrop that small and medium-sized businesses promote entrepreneurship and fierce rivalry, which have positive external effects on the economy's efficiency and productivity growth. At this level, views are focused on government engagement and assistance in using the social gains that come from increased productivity and entrepreneurship for the country. Secondly, while it is true that SMEs are often more productive than large companies, direct government financial support for SMEs can help spur economic growth and development together with other institutional changes in the financial sector.

The rate of expansion of entrepreneurial activity in Nigeria is constrained by several factors. Therefore, this study examined the impact of small and medium-scale enterprises output on economic growth in Nigeria.

2. Literature Review

Small and Medium Enterprise (SMEs)

Huq (2024) defines economic growth as a sustained increase in real GDP driven by trade openness, particularly across G-20 nations. Also, Janischewski et al. (2024) defines economic growth dependence as the systemic requirement for continued positive output growth to maintain stability in modern economies. More so, Chakrabarti et al. (2023) Economic growth is seen as sensitive to shocks (e.g. natural

disasters) especially in lower-income countries, affecting per capita GDP growth. Giovannelli et al. (2023) Conceptualizes economic growth as the trend component of aggregate output (GDP) measured via band-pass filtering.

Concept of Economic Growth

Eller et al. (2023) defines SMEs are firms with limited size and resources, often lacking formal structure and scalable digital capacity. According to Child et al. (2022) SMEs are variably defined depending on regional or sectoral context, often based on employee count or turnover, typically below 250 employees. Niranga et al. (2022) describes SMEs as small firms contributing significantly to economic productivity and digital growth transformation, often employing fewer than 250 people. OECD (2022) defines SMEs as non-subsidary, independent firms employing fewer than 250 people, with turnover thresholds defined by country.

Theoretical Review

Endogenous growth theory

This theory was propounded by Paul Romer in 1986. Based on the theory, investments in human capital, innovation, and knowledge are essential for any country to enjoy economic progress. The theory highlights the reasons why inspiring innovation in individuals is crucial for both the public and private sectors. According to the hypothesis, an economy's ability to diversify adequately into other non-oil sectors will likely have an impact on its ability to grow economically in three different ways: through solid mineral production, manufacturing, and agricultural output.

This study is anchored on this theory because it emphasizes the role of internal economic activities such as investment in human capital, innovation and entrepreneurship as primary drivers of long run economic growth. SMEs, being a key component of domestic production and innovation, are well- positioned within this framework. The theory further highlights how financial access and policy-driven investments can lead to productivity improvements, making it suitable for examining the contribution of SMEs to Nigeria's economic development.

Empirical Review

Tahir et al. (2021) investigated the relationship between SME performance and economic development in Nigeria from 1980 to 2017. Annual series data were acquired, and the ARDL technique to cointegration was used to investigate the problem. The results indicated both positive and negative connections; nonetheless, the variables were cointegrated, satisfying the required criteria for calculating the long-term relationship among the variables.

Al-Afeef (2020) studied the influence of support for small and medium-sized firms (SMEs) on GDP and unemployment, as well as the quantity of money supplied by specialized organizations. Between 2009 and 2018, the research population comprised Jordanian SMEs institutions. Analytical and descriptive methods were employed to evaluate the hypotheses, and a basic regression model was utilized to assess the study's hypotheses using a statistical model (SPSS). The most important conclusion of this study was the statistically significant influence of SMEs funding on GDP and unemployment, with the study model able to predict 95% of changes in economic development.

Tahir and Inuwa (2019) investigated the socioeconomic determinants influencing the performance of Micro, Small, and Medium Scale Enterprises in Maiduguri, Borno State, Nigeria. Data was collected through a survey of 84 Micro, Small, and Medium Enterprise operators in Maiduguri and analyzed using the Statistical Package for Social Sciences (SPSS) version 23. The data was analyzed using descriptive and inferential statistics. According to the findings of the Exploratory Factor Analysis, Correlation, and Multiple Regression Analysis, instability and poor infrastructural facilities are the most significant variables influencing MSMEs performance in Borno state. In order to increase MSMEs' performance, the report suggests that the government offer greater security and improve infrastructure amenities such as electricity supply.

Adelekan and Adedeji (2019) examined the link between bank loan and Small and Medium Enterprise performance in Lagos, Nigeria. The study adopted the survey

research design. The survey research design was adopted in carrying out the study, through the administration of structured questionnaire to selected chief executives of SMEs in Lagos. Two hypotheses were formulated and Pearson correlation analysis was employed to ascertain the association between bank loan and SMEs performance. The findings revealed that access to loan is positively associated with business expansion of SMEs in Nigeria. It is therefore concluded that bank loan is strongly associated with SMEs performance, particularly SMEs business expansion and output.

Ogbonna and Ogbonna (2019) investigated the Small and Medium Enterprise (SME) and the Nigerian Economy empirically. The ARDL technique to cointegration was used in the study, which spanned the years 1981 to 2017. The ARDL findings verified the absence of a long-run link between GDP growth rate, commercial bank credit to SMEs, SMEs output, and lending rate.

Adaku and Chukwuma (2019) investigated the Small and Medium Enterprise (SME) and the Nigerian Economy empirically. The ARDL technique to cointegration was used in the study, which spanned the years 1981 to 2017. The ARDL findings verified the absence of a long-run link between GDP growth rate, commercial bank credit to SMEs, SMEs output, and lending rate.

Bello et al. (2018) evaluated the influence of small and medium-sized firms on Nigerian economic growth using time series data from 1986 to 2016. The information came from the Central Bank of Nigeria's (CBN) annual statistics bulletin. The data acquired for the study is interpreted and analyzed using regression analysis. The study's findings demonstrate a favorable and substantial association between small and medium-sized businesses and production growth.

Scholastica et al. (2018) estimate the influence of small and medium companies (SMEs) on economic growth in Nigeria using an econometric regression model using the Ordinary Least Square (OLS) and time series data spanning the period 1980 to 2016. According to the findings of their research, small and medium enterprises, government spending on small and medium enterprises, job creation, commercial bank credit to small and medium enterprises, and lending rates to small and medium

enterprises all have a positive impact on Nigeria's economic growth. Corruption has a detrimental influence on Nigeria's economic progress. However, all of the explanatory factors have a considerable influence on Nigeria's economic growth.

3. Methodology

Model Specification

This study adopted the model of Tahir et al. (2021) to estimate the impact of small and medium scale enterprise output on Economic growth in Nigeria.

The model is given as:

$$\log GDP_{it} = \beta_0 + \beta_1 \log SMEQ_{it} + \beta_2 \log CBSME_{it} + \beta_3 \log LR_{it} + \beta_4 \log INF_{it} + u_{it} \dots (1)$$

Where:

GDP = Gross domestic product

LSMEQ = SMEs output proxy by Wholesale and Retail Trade output as a component of gross domestic product (GDP)

LCBSME = Commercial bank's credit to SMEs

LR = Lending rate

INF = Inflation

Log = Natural logarithm

$\beta_0 - \beta_1$ = coefficients

μ and t = Error term or white noise and time trend over the study period respectively.

However, the model (1) is transformed into an ARDL model as;

$$\Delta \log GDP_t = \beta_0 + \sum_{i=1}^n \beta_1 \Delta \log GDP_{t-i} + \sum_{i=1}^n \beta_2 \Delta \log SMEQ_{t-i} + \sum_{i=1}^n \beta_3 \Delta \log CBSM_{t-i} + \sum_{i=1}^n \beta_4 \Delta \log LR_{t-i} + \sum_{i=1}^n \beta_5 \Delta \log INF_{t-i} + \alpha_1 \ln GDP_{t-1} + \alpha_2 \ln SMEQ_{t-1} + \alpha_3 \ln CBSM_{t-1} + \alpha_4 \ln LR_{t-1} + \alpha_5 \ln INF_{t-1} + \mu_t \dots (2)$$

Δ is the difference operator, β_0 in each equation is the constant parameter, β_1 to β_5 are the vectors of the coefficients of the first difference lagged values of the variables controlled in models, while α_1 to α_7 for each equation represent the coefficients of the level lagged values of variables captured in models. Although, the ARDL model consist of two parts, the first part of the equations with β_1 to β_5 stand for the short-run dynamics of the models, while the coefficients α_1 to α_5 represents the long-run relationship. The null hypothesis of the above models is defined as $H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 0$ which tell us that there is no cointegration (no existence of long run relationship) among the variables under consideration whereas the alternative hypothesis is defined as $H_1: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5 \neq 0$ which signify the existence of cointegration (presence or evidence of long run relationship) (Pesaran et al., 2001).

4. Results and discussions of findings

Table 1: Result of Summary Statistic

Variables	LGDP	LSMEQ	LCBSME	LR	INF
Mean	2.968133	1.476304	2.089524	1.724726	9.300629
Median	30.07350	1.694432	21.13368	16.90390	39.71753
Maximum	33.08816	2.219289	22.23816	31.65000	524.9054
Minimum	25.65997	-0.417405	19.05759	8.916667	0.489349
Std. Dev.	2.490591	0.649397	1.004901	4.785759	1.242000
Skewness	-0.308342	-1.382200	-0.391333	0.396544	1.779894
Kurtosis	1.669482	4.325214	1.843482	3.635158	5.717067
Jarque-Bera	3.853115	16.83825	3.493929	1.849745	35.93106
Probability	0.145649	0.000221	0.174302	0.396582	0.000000

Source: Author's Computation

Table 1 shows the result of summary statistic for all the variables of the study. From the result, the mean for all the variables are positive and are as small as possible. The standard deviations for all the variables are also small, suggesting that the estimated values are not significantly different from their actual values. Again, the probability values of Jarque-Bera for GDP, CBSME, LR, except that of INF happens to be insignificant at 5 per cent level of significant. This suggests that series are normally distributed.

Unit Root Test of Stationarity

Table 2: Result of Unit Root Test of Stationarity

Variables	ADF at Level	ADF at 1 st Difference	Order of integration	PP at Level	PP at Difference	Order
GDP	0.109210	-3.743591	I(1)	-0.686160	-3.673068	I(1)
SMEQ	-2.858182	-5.852839	I(1)	-2.858182	-5.838072	I(1)
CBSME	-4.608244	-5.521930	I(0)	-3.642991	-5.514389	I(0)
LR	-2.390834	-5.871502	I(1)	-2.304369	-7.268630	I(1)
INF	-1.454104	5.873872	I(1)	1.068069	28.99260	I(1)
ADF critical value at 5% = -3.523623				PP critical value at 5% = -3.520787		

Source: Author's Computation

Table 2 shows the result of the unit root test of stationarity conducted using the Augmented Dickey-Fuller (ADF) and Phillips-Perron unit root test. The results show that GDP, SMEQ, LR, and INF are not stationary at levels because their calculated ADF and PP values are less than their critical values at 5%. However, when the variables are differenced, they become stationary at first difference. Hence, GDP, SMEQ, LR and INF are integrated of the order one (I (1)). While, CBSME is integrated of the order zero (I (0)). The mixed order of integration satisfied the condition for the use of ARDL model suggested by Pesaran *et al.* (2001).

Table 3: Result of Lag Selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
-						
0	473.7862	NA	17153.82	23.93931	24.15042	24.01564
1	-193.5057	476.4768*	0.049653*	11.17529*	12.44195*	11.63327*
2	-152.2952	59.75523	0.023471	10.36476	12.68697	11.20440
3	-129.8138	26.97767	0.031361	10.49069	13.86845	11.71198

Source: Author's Computation

Table 3 present the result of optimal length of lag selection for the co-integration testbased on the five information criteria. From the table, all the five information criteria suggest that a lag length of one is optimal for the test. Hence, this study used a lag length of one for the test of co-integration.

Bound Co-integration Test

Table 4: Result of Bound Co-integration Test

		Null Hypothesis: No levels		
F-Bounds Test	relationship			
Test Statistic	Value	Significant.	I(0) Bound	I(1) Bound
F-statistic	10.53913	10%	2.45	3.52
K	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Author's Computation

The result of F-bound co-integration revealed that the F-statistics is 10.5 which is greater than 5% significance level. Therefore, the null hypothesis of no co-integration is rejected while the alternative hypothesis of the presence of co-integration among the variables is accepted. It can be concluded that the variables of the study have a long-run equilibrium relationship.

Long-Run ARDL Model

Table 5: Result of Long-Run ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SMEQ	6.013273	11.410767	0.526982	0.0035
CBSME	4.098439	9.842303	0.416411	0.0211
LR	-2.537986	3.536175	-0.717721	0.0405
INF	-0.093035	0.153601	-0.605696	0.0109
C	93.189738	172.188731	0.541207	0.5938

Source: Author's Computation

Table 5 shows the result of long-run ARDL model. The result shows that SMEQ has positive and significant impact on GDP in Nigeria. That is percentage increase in

SMEQ increase GDP by 6.0 percent. This suggests that SMEQ contribute meaningfully to Nigeria's economic growth, employment generation and industrialization. This advanced the findings of Bello et al. (2018) and Scholastica et al. (2018). However, CBSME has a positive and significant impact on GDP in Nigeria. That is percentage increase in CBSME increase GDP by 4.0 percent. This suggest that increased access to credit empowers SMEs to expand operations, invest in capital and hire more workers, which stimulates overall economic activity. This is in line with the findings of Adelekan et al. (2019) and Scholastica et al. (2018). Furthermore, the result shows that LR has negative and significant impact on GDP in Nigeria. That is percentage increase in LR decrease GDP by 2.5 percent. This suggests that high interest rates discourage borrowing and investment, particularly by SMEs, which in turn slows down economic activities. This agrees with the findings of Jumbo et al. (2012) but contradicts that of Scholastica et al. (2018). More so, the result shows that INF has negative and significant impact on GDP in Nigeria. That is percentage increase in INF decrease GDP by 0.09 percent. Suggesting that rising prices erode purchasing power, discourage savings and investment and increase uncertainty in the economy. This is in line with Jumbo et al. (2012).

Short-Run ARDL Model

Table 6: Result of Short-Run ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SMEQ)	0.000615	0.036689	0.016754	0.0228
D(CBSME)	-0.020556	0.039381	-0.521962	0.6069
D(LR)	-0.008475	0.004460	-1.900146	0.0306
D(INF)	-0.004991	0.001750	-2.852108	0.0093
CointEq(-1)	-0.009613	0.012797	-0.751160	0.0405
			F-statistic	
R-squared	0.999634		1.999036	
			Durbin-Watson stat	
Adjusted R-squared	0.999367		1.999036	

Source: Author's Computation

The result of short-run ARDL model is shown in table 6. The result reveals a negative error correction term (ECMt) and statistically significant at 5 per cent. The coefficient of ECM indicates an annual level of adjustment from long-run disequilibrium of about 96 per cent per annum. This means that in the current year, about 4 per cent of the disequilibrium errors, which occurred the previous years, are corrected. Also, the result shows that a percentage increase in SMEQ increases GDP by 61%. While, CBSME has negative and insignificant impact on GDP. The result shows that a percentage increase in CBSME decrease GDP by 20%. LR and INFR have negative and significant on GDP in the short run. The R-square of the model show that about 99 percent of the variation in GDP is explained by the combined effects of all the determinants of GDP used in the study, suggesting that about 1 percent variation in GDP is accounted for by other factors not included in the model. The F-statistic is very high, suggesting that the parameters are significant. The D-W is close to 2, suggesting negative autocorrelation in the model.

Table 7: Diagnostic Test

Serial Correlation LM Test			
F-statistic	3.384389	Prob. F(2,20)	0.5042
Obs*R-squared	9.861575	Prob. Chi-Square(2)	0.7200
Heteroskedasticity Test			
F-statistic	0.748995	Prob. F(16,22)	0.7202
Obs*R-squared	13.75277	Prob. Chi-Square(16)	0.6171
Scaled explained SS	6.499570	Prob. Chi-Square(16)	0.9817

Source: Author's Computation

Table 7 shows the post estimations statistics for the variables of the study. The serial correlation LM test has a probability values of 0.5042 and 0.7200 which are greater than 0.05 level of significance. This suggests the evidence of absence of autocorrelation in the model. Similarly, the probability values for the test of heteroskedasticity are greater than 0.05% level of significance, implying that the series are homoscedastic.

Figure 1: Normality Test

Test

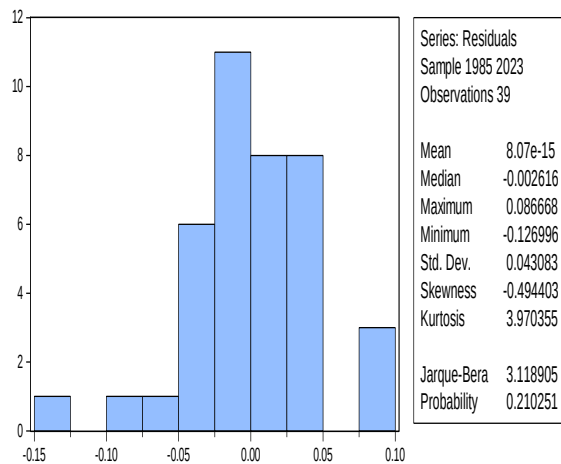
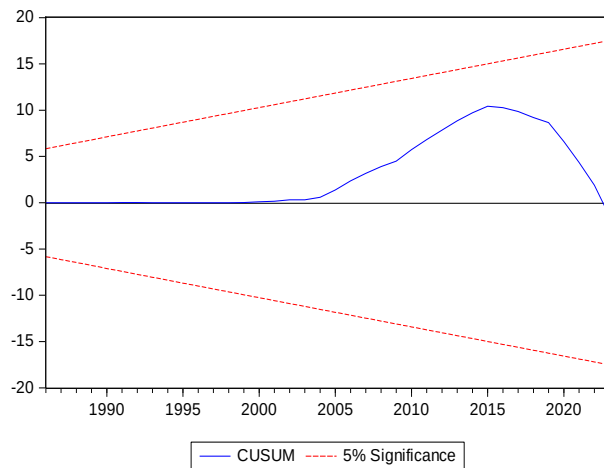


Figure 2: Stability



The normality plot reported in Figure 1 shows that the Jarque-Bera value and its probability is 0.21, which is greater than 5% level of significance. Hence, the data used for this study are normally distributed. The result passed the test of stability considering the CUSUM plot reported in Figure 2 does not cross either of the 5% critical lines. Therefore, the estimated parameters for the study are stable for the period of the study.

5. Conclusion and Recommendations

Based on the findings, it can be concluded that small and medium scale enterprises significantly contribute to economic growth in Nigeria. Access to commercial bank credit positively influences this growth by enabling SME expansion and productivity. However, high lending rates and inflation negatively impact economic growth performance by discouraging investment and reducing purchasing power. Therefore, fostering economic growth in Nigeria requires policies that support development, enhances access to affordable credit and maintain macroeconomic stability through low interest and inflation. Recommended policies based on the findings are:

- i. The government should prioritize the development of SMEs through targeted interventions such as tax reliefs, business development services, access to

- industrial clusters and reduction of bureaucratic bottlenecks. Strengthening SME capacity will boost their contribution to GDP, employment and innovation.
- ii. The Central Bank of Nigeria and commercial banks should expand and simplify SME credit programs by lowering interest rates, reducing collateral requirements and introducing credit guarantee schemes. This will encourage more borrowing and investment by SMEs, thereby stimulating economic growth.
 - iii. Policymakers should adopt coordinated fiscal and monetary strategies to maintain low inflation and stable interest rates. This includes prudent public spending, effective inflation targeting and support for key sectors such as agriculture and energy to reduce inflationary pressures and improve the overall business environment.

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