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MICROCREDITS AND ECONOMIC GROWTH INNIGERIA: THE STEPWISE REGRESSION ANALYSIS APPROACH

By

Utele, Joshua Imawaiya, Nnamdi, Ikechukwu Samuel and Ifionu, Ebere Patricia

Department of Finance and Banking, Faculty of Management Sciences, University of Port Harcourt.

Corresponding Author:

Abstract:

The present study examined the relationship between microcredit allocation and economic growth using the stepwise regression technique. The stepwise regression is used to rank the effects of sectoral microcredits and identify which variables contribute most significantly to explaining variations in gross domestic product (GDP).The study used time-series data, sourced from Central Bank of Nigeria reports from 1992 to 2022. Five sectors were considered for this study namely microcredits allocations to Agriculture/Forestry, Manufacturing/Food processing, Mining/Quarry, Real Estate/Construction, and Transport/Commerce. Five models 1-5 were developed using predictor variables, the result showed that model 5, a comprehensive model incorporating Microcredit in Agriculture and Forestry Sector (MCAS), Microcredit in Manufacturing and Food Processing Sector (MCMS), Microcredit in Mining and Quarrying Sector (MCMQ), Microcredit in Transport and Commerce Sector (MCTC), and Microcredit in Real Estate and Construction Sector (MCREC), explained a substantial 91.8% of the variations in gross domestic product (GDP). Therefore the study concludes that microcredit allocation to the five sectors had significant effect on economic growth in Nigeria.

Keywords:

Microcredit, Economic Growth, Gross Domestic product, stepwise regression.

1.0 Introduction

According to Igiebor (2015), the Nigerian government has been tasked with the main goal of developing beneficial microfinance structures over the years and at the policy level. These structures will not only raise the standard of living for the active and entrepreneurial population, but also give them access to microcredit facilities at comparatively lower costs. These are necessary to expand the number of employment options available, which will allow the active poor to contribute to the economy's overall and faster growth rate.

It is important to mention that microfinance banks are actual instrument in this development process, particularly at the local level. Microfinance institutions have been in operation in Nigeria since before the country gained its independence, when the activities of the traditional group networks that functioned as owners of financial exchanges, headed by traditional money lenders, and the conventional thrift saving system were unable to keep up with the expanding needs and population of people in rural communities.

Microfinance is defined in this context as the provision of a full range of financial services, including microcredit, microlease, microsavings, insurance, and funds transfers to the active and entrepreneurial poor who typically do not have access to the services of conventional deposit money banks in a bid to improve their economic situation and help them become self-employed and economically independent, (Omorede, 2014).

Credit allocation process can be defined in its simplest form as the process of appraising and allocating available scarce financial resources to available and competing uses in order to attain planned goals (Saqib, Kuwornu, Panezia, & Ali, 2018). In achieving planned growth and development in any economy, credit allocation is central. Lenders make decisions regarding how to allocate their available credit to borrowers. It is a complicated procedure that depends on several variables, such as the borrower's creditworthiness, the lender's risk tolerance, and the state of the economy as a whole.Therefore, a proper understanding of the type of relationship that exist between a nation’s economic advancement and allocation of credit todeserving sectors is important (Zia, 2008).
Given that nations are faced with the obvious problems of managing scarce financial resources to meet multivariate needs, it follows that rational choices have to be made (Cong, Gao, Ponticelli, & Yang, 2019). These choices and decisions significantly prevail in the credit allocation process. An efficient credit allocation exists if society has achieved the highest level of prioritization of needs from the available scarce financial resources. These resources in general are needed to achieve nominated goals and finally infrastructural facilities needed to develop preferred sectors. Rational credit allocation is therefore of essence since it is central to the growth of any economy.

Achieving the expected balance and inclusive economic growth is a big challenge faced by policy makers globally. Kamath (2009) observed that the gains of economic growth are relatively more accessible in urban areas compared to rural settlements in the less developed economies. However, achievement of balanced sectoral and regional growth in any nation is key to attainment of long-term sustainability of social development and economic prosperity. To develop a framework for socio-economic empowerment of the people, access to financial service is essential, since this will be an enabler for those engaged in micro businesses to beexamined within the framework of the activities in the economy. By this singular act, opportunity is created for the potential development of the nation’s physical and human resources capabilities. Micro businesses have hidden demand for credit, savings

and risk mitigation products like insurance. Globally, there has been an increased demand by government and its regulators as a matter of priority for an expansion of financial services delivery to this segment of the society.

The outlook of the Nigerian economy portrays a picture of a developing economy. The primary sector of Nigeria's economy in the recent times, had not done well (Newman, Page, Rand, Shimeles, Soderbom, & Tarp, 2016). The oil and gas sector between 2011 and 2016, dominated Nigeria's gross domestic products with about ninety-five percent (95%) attributable to government revenue summing up to about eighty-five percent (85%) (Newman *et al.,* 2016). By 2011, the industrial sector accounted for six percent(6%) of economic activity, while manufacturing sector contribution was only four percent (4%) to gross domestic products. This over reliance on the oil sector has by no means impacted on the meagre performance of the other classified sectors in a large part of post-independence Nigeria. This has in no doubt necessitated rational and need-based allocation of credits (microcredits to the various sectors) as accentuated by Oladepo, Oluwasanu, &Abiona (2018).

Wachukwu, Onyema, and Amadi (2018) opined that micro finance institutions revealed that that there is a significant relationship between credit growth, deposit growth, investment growth, and asset growth of microfinance banks.Each of these factors contributes positively to economic growth, indicating that microfinance banks play a vital role in enhancing financial accessibility and serve as enablers for growth.
Despite divergent views arising from studies carried out in this area of interest, the nature of the interrelationship in sectoral allocations of microcredits and economic growth, presently, there arises a need for microcredit financing in the quest for economic emancipation and diversification despite the low quantum of the empirical work on the subject.It is on this premise that, this paper examined the nature of prevailing interrelationships between microcredits allocated to the different classified sectors of the economy and Nigeria's economic growth.

1.1 Aim and Objectives

i. Determine the influence of microcredit allocations to various sector of the economy in Nigeria on Gross Domestic product in Nigeria.
ii. Evaluate the nature of contributions to sectoral microcredits disbursements to total variations (R^2) in Nigeria's gross domestic product.

2.0 Theoretical Framework and Literature Review

From the evolving economic interplay that provides for allocation of resources across various sectors to drive economic growth in a developing economy such as Nigeria, there exist a broader range of conclusionapriori, thatmicrocredits allocationto a large extent are tailored towards leveraging the active poor. For a better understanding of this discussion, this section is subdividedinto two (2) as follows;

2.1 Theoretical Considerations

Financial intermediation theory is chosen has one of the basis of this study. The theory of financial intermediation is defined as the entire process of rallying financial resources through financial institutions or intermediaries which comprise of the surplus saving units for on-lending to the deficit

spending units of an economy(Ezirim, Muoghalu, &Emenyonu, 2012). The foundations are traceable to the works of Gurley and Shaw (1960) which drew heavily on theories of information asymmetry as well as agency. It operates on this tripod of high transaction cost, lack of adequate information as and when required; and how the regulation is carried out.The theory of financial intermediation was firstly seen in the works of Goldsmith (1969), Mckinnon (1973) and Shaw (1973) who recognizes financial markets as very important players in growth of the economy. The theory attributes the alterations in economic growth among nations to the magnitude and value of services provided by financial institutions. It contrasts Robinson (1952) who argued that financial markets are fundamentally handmaidens to local industry and inertly respond to other variables that drive cross-country variances in growth.

Li (2021) posited that as economic financialization deepens with the quick growth in globalization, financial intermediaries are increasingly creating significant impact globally in their own sphere. Developing countries are recognizing the important roles of financial intermediation in economic growth, amongst which are enabling payment and settlement, mobilizing financing, reduction of transaction costs, improving information asymmetry, and the development of risk management processes.

Another theory selected for the purpose of this work is the credit rationing theory. The theory seeks to provide access to credit, and it is built on the works laid by some scholarly works of Stiglitz & Weiss, 1981; Bester, 1985; Cressy, 1996; Baltensperger & Devinney, 1985. Stiglitz and Weiss (1981) defined credit rationing as the situation in which some borrowers are given a loan while others are not. Credit rationing occurs at the financier level as a result of information asymmetry and imperfect credit markets, or it occurs willingly by the borrowers (voluntary exclusion). Credit rationing at the financier level happens when demand for credit outpaces supply at the going rate of interest (Stiglitz & Weiss, 1981). In practical terms, Jaffee and Russell (1976) defined credit rationing as the method by which lenders group individuals or businesses that borrow money into tiny groups or numbers according to a variety of scoring elements, including collateral, industry, and the reason for borrowing. Upon classification, each financing provider sets a single interest rate for each group, despite the fact that the businesses or individuals in a group may differ in terms of risk and loan amount (Jaffee & Russell, 1976). To manage assortment, financiers restrict credit to businesses or individuals in the group whose loan demand is greater than the credit supply (Stiglitz & Weiss, 1984, 1986, 1987a, 1987b; Swank, 1996). The definition of surplus demand, whether it is temporary or ongoing, and—above all—the variables that contribute to a low lending rate determine the type of credit rationing that is used (Williamson, 1986).

2.2 Review of Previous Studies

Akpansung and Babalola (2011) investigated the link between microcredits provided by the banking sector and economic growth in Nigeria between 1970 and 2008. The study was aimed atthe connection between loans provided by the banking industry and Nigeria's economic growth between 1970 and 2008. The Granger causality test was performed to determine the causal relationships between the pairs of variables of interest, and the regression models were estimated using the Two-Stage Least Squares (TSLS) method. Results of the Granger causality test indicate a one-way causal relationship between GDP and industrial production index (IND) and private sector credit (PSC) as well as between GDP and PSC. Regression models that were estimated suggest that across the study's coverage period, private sector loans had a favourable impact on economic growth. But the cost of credit (interest) limits economic expansion. Over and above that, the study urges further financial

market development that favours increased private sector credit with low interest rates to spur economic growth.

Nwakanma, Nnamdi, and Omojefe (2014) examined the relationship between Nigeria's economic growth and the distribution of microcredit. Using Granger and Auto-Regressive Distributive Lag Bound (ARDL) tests, the study discovered a significant long-term correlation between microcredit operations and Nigeria's economic growth from 1982 to 2011. A significant unidirectional causal relationship between disbursed microcredits and Nigeria's gross domestic product was further supported by the Granger causality results. To further enhance the impact of microcredit operations on Nigeria's economic growth, the study suggested stepping up the creation of microdeposit and credit products and strengthening the enforcement of credit agreements.

Okpanaki and Fabian (2022) examined the effectiveness and impact of financial microfinance strategies on the expansion of women entrepreneurs' businesses in Gboko, Benue state, Nigeria. Survey research design was employed in the study. Collection of data was carried out from a predefined group of respondents, who were employees of a registered microfinance institutions in Gboko, Benue State. The study covered the period from January 2021 and January 2022 and examined seven (7) licensed microfinance institutions in Gboko, Benue State, Nigeria. The population and sample size were the same (395 staff members of registered microfinance banks), the study was a census. Questionnaire was the tool employed in gathering data from the sampled respondents—junior (208), medium (139), and top (48) staff members of the sampled banks. The formulated hypotheses were examined using regression. The outcome of the study showed a significant correlation between soft loan financial strategy and the growth of women entrepreneurs' businesses in Gboko, Benue State. Loan repayment strategy also significantly influences the growth of women entrepreneurs' businesses. The conclusion from the study that loan payback techniques and soft loan funding plans are very potent strategic tools for achieving women entrepreneurs' business growth in Gboko, Benue State, Nigeria.

Nnamocha and Eke (2015) examined the effect of bank credit on agricultural output in Nigeria. The study was carried out using Error Correction Mode (ECM) with yearly data from 1970- 2013. According to the study's findings, industrial output and bank credit both significantly impacted Nigeria's agricultural output over the long term, but only industrial output had a short-term impact.

Marshal, Solomon, and Onyekachi (2015) used annual data from 1980 to 2013 to investigate the effect of bank domestic credits on Nigeria's economic growth. The study employed gross domestic product as a proxy for economic growth and credit to the private sector (CPS), credit to the government sector (CGS), and contingent liability as proxies for bank domestic credit. Credit to the government sector (CGS) and the private sector (CPS) have a short-term, positive, and significant correlation with GDP, according to the estimated model's relative statistics. Analysis showed that there were long-term poor.

3.0 Organization of Data and Methodology

Secondary data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin was employed for the study. The study comprise yearly time series data on sectoral micro credit allocations to different sectors of the economy as independent variables while the dependent variable will comprise Nigeria’s gross domestic product.

The process by which variables are chosen to be incorporated into a model is known as model specification.(MacCallum, 1995).

The model specification in this study is accordingly expressed as follows:

$GDP_t = f(MCAS_t, MCMQ_t, MCMS_t, MCREC_t, MCTC_t)$ Equation 1

Where:

GDP = gross domestic product

MCAS = Microcredit in to Agriculture and Forestry Sector

MCMQ = Microcredit in to Mining and Quarrying

MCMS = Microcredit in to Manufacturing and Food Processing Sector

MCREC = Microcredit in to Real Estate and Construction

MCTC = Microcredit in to Transport and Commerce

t = time period

For the purpose of empirical estimations, model 1 is re- written with introduction of coefficients and error term as shown in equation 2 below:

$GDP_t = \beta_0 + \beta_2 MCMQ + \beta_3 MCMS + \beta_4 MCREC + \beta_5 MCREC + \mu$ Equation 2

Where:

GDP assumes its previous notion in equation 3

μ	=	Error term
β_0	=	constant term
β_1 - $\beta 5$	=	Coefficient of the Independent variables specified in equation 3

The Augmented Dickey Fuller (ADF) test was used in the study to examine the time series data's stationarity characteristics. The majority of macroeconomic time series have a unit root, as stated by Nelson and Plosser (1982). The Johansen co-integration test was used to find out if the regression residual is stationary. The presence of co-integrating relationship result to the reason behind the use of vector error correction model, finally, the Granger causality test was employed to measure the extent to which economic growth in Nigeria is promoted or supported by each classified sectoral micro credit allocation and vice-versa in the growth process. The following equation willserve as basis for the test.

 Equation 4

and

 Equation 5

4.0 Presentation of Results

Table 1: Annual Data on Gross Domestic Product (GDP), Microcredit allocations to Agriculture and Forestry Sector (MCAS), Microcredit allocations to Mining and Quarrying (MCMQ), Microcredit allocations to Manufacturing and Food Processing sector (MCMS), Microcredit allocations to Real Estate and Construction (MCREC), Microcredit allocations to and Transport and Commerce sectors (MCTC) in Nigeria (1992-2022), (N'billion).

YEARS	GDP	Agriculture and Forestry (MCAS)	Mining and Quarrying (MCMQ)	Manufacturing and Food Processing (MCMS)	Real Estate and Construction (MCREC)	Transport and Commerce (MCTC)
1992	22765.55	3674.79	6411.86	4667.76	1770.25	2562.81
1993	22302.24	3743.67	6415.38	3850.41	1848.11	2639.81
1994	21897.47	3839.68	6246.67	3364.57	1903.38	2640.58
1995	21881.56	3977.38	6393.05	2898.47	1961.53	2645.27
1996	22799.69	4133.55	6850.37	2990.69	1982.20	2671.14
1997	23469.34	4305.68	6952.09	3051.91	2108.47	2715.01
1998	24075.15	4475.24	7103.38	2908.21	2234.50	2798.69
1999	24215.78	4703.64	6572.89	2975.62	2319.20	2871.44
2000	25430.42	4840.97	7302.99	2980.65	2410.11	2921.80
2001	26935.32	5024.54	7685.37	3050.51	2576.33	3000.03
2002	31064.27	7817.08	7247.86	3591.40	2663.46	3227.11
2003	33346.62	8364.83	8975.81	3203.24	2787.32	3399.08
2004	36431.37	8888.57	9275.14	3169.21	2943.19	4685.41
2005	38777.01	9516.99	9323.75	3242.20	3277.41	5285.64
2006	41126.68	10222.47	8907.47	3268.55	3671.52	6051.45
2007	43837.39	10958.47	8508.82	3271.65	4114.73	6928.32
2008	46802.76	11645.37	7989.19	3369.71	4614.06	7860.41
2009	50564.26	12330.33	8030.01	3491.29	5131.84	8735.65
2010	55469.35	13048.89	8454.55	3578.64	5698.96	9687.42
2011	58180.35	13429.38	8658.05	4216.19	5963.70	10377.14
2012	60670.05	14329.71	8244.39	4783.66	6369.40	10564.76
2013	63942.85	14750.52	7188.15	5826.36	7177.02	11245.98
2014	67977.46	15380.39	7107.03	6684.22	7724.19	11896.49
2015	69780.69	15952.22	6732.51	6586.62	7944.92	12503.05
2016	68652.43	16607.34	5759.82	6302.23	7424.45	12477.66
2017	69205.69	17179.50	6025.78	6288.90	7240.38	12386.30
2018	70536.35	17544.15	6092.48	6420.59	7077.15	12430.43
2019	72094.09	17958.58	6362.63	6469.83	7018.89	12489.82
2020	70800.54	18348.18	5819.39	6291.59	6412.31	11283.17
2021	73382.77	18738.41	5366.19	6502.26	6577.47	12318.20
2022	75768.95	19091.07	4391.42	6661.39	6852.00	13046.51

Source: Central Bank of Nigeria, Statistical Bulletin (2022).

Graphical Analysis

Graphical analysis in this study is essential because it provides a visual representation of complex statistical data, enabling an intuitive understanding of trends, patterns, and relationships that might be difficult to discern from numerical values alone. The study proceeds to present the graphical analysis as follows;

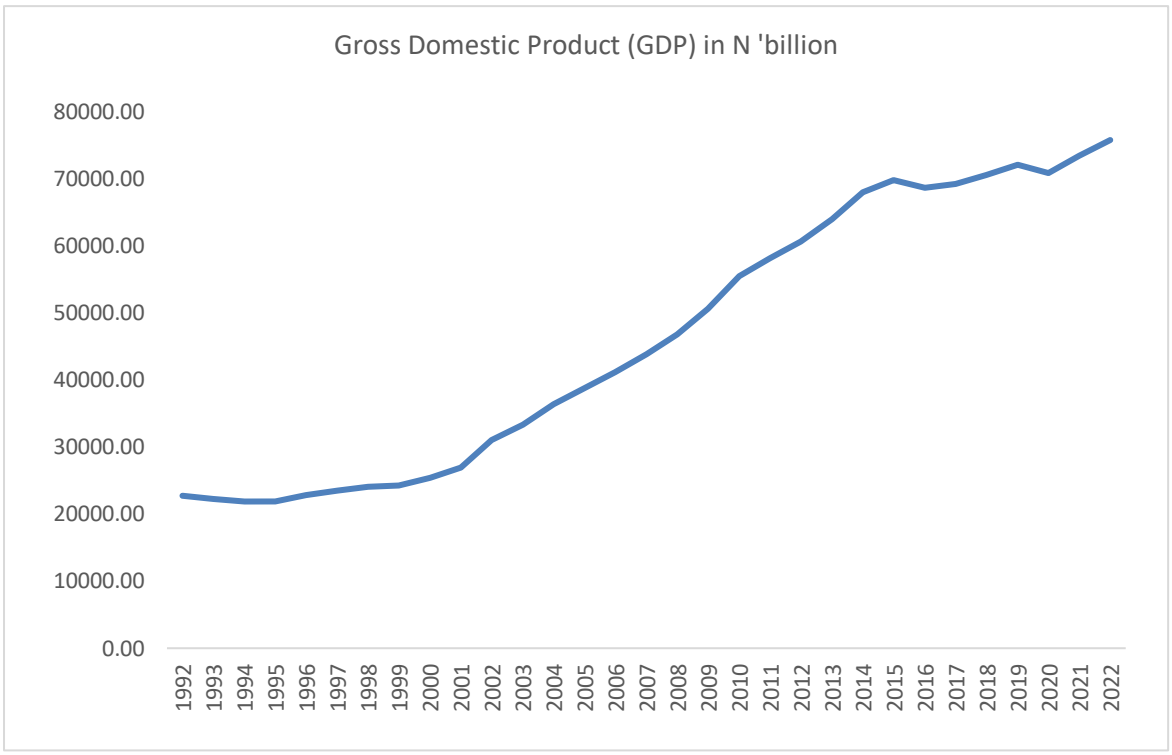

Figure 1: Graphical Trend of Gross Domestic Product (GDP) in Nigeria over the period of 1992 to 2022.

The given data on Gross Domestic Product (GDP) from 1992 to 2022 in Figure 4.1 described an interesting and multifaceted trend over the study period. The period from 1992 to 1995 showed a slight decrease in Gross Domestic Product (GDP), falling from N22,765.55 billion to ₦21,881.56billion. This phase represents an era of stagnation and marginal decline.Starting in 1996, there is a consistent upward trend lasting until 2008. During this period, Gross Domestic Product (GDP) grew from N22,799.69 billion to N46,802.76billion. This growth is characterized by relatively stable annual increases, reflecting possibly a time of economic stability and growth in various sectors.From 2009 to 2015, the data showed a more accelerated growth, where Gross Domestic Product (GDP) expanded from N50,564.26 billion to N69,780.69 billion. This period might signify the recovery from a global financial crisis or the effects of robust economic policies.There is a noticeable contraction in Gross Domestic Product (GDP) in 2016, dropping to ₦68,652.43billion, followed by a minor rebound in 2017. This indicated a short-term economic shock or recession.From 2018 onward, there is a return to a steady growth pattern, reaching N75,768.95 billion in 2022. This final phase showed a resilient economy, possibly benefitting from strategic policy interventions.The periods of growth might correlate with effective distribution of microcredits to the various sectors (agriculture, mining, manufacturing, etc.), stimulating economic activity.

Conversely, the periods of decline or stagnation could reflect challenges or shortcomings in the microfinancing system. Further analysis with additional data on microcredit distribution across these years would be essential to ascertain these relationships and to validate or revise the initial hypotheses of the study (Friedman & Schwartz, 1963; Yunus et al., 2010). This trend analysis, therefore, not only

described the macroeconomic trajectory but also set the stage for a deeper exploration of the interplay between microfinance and overall economic performance.

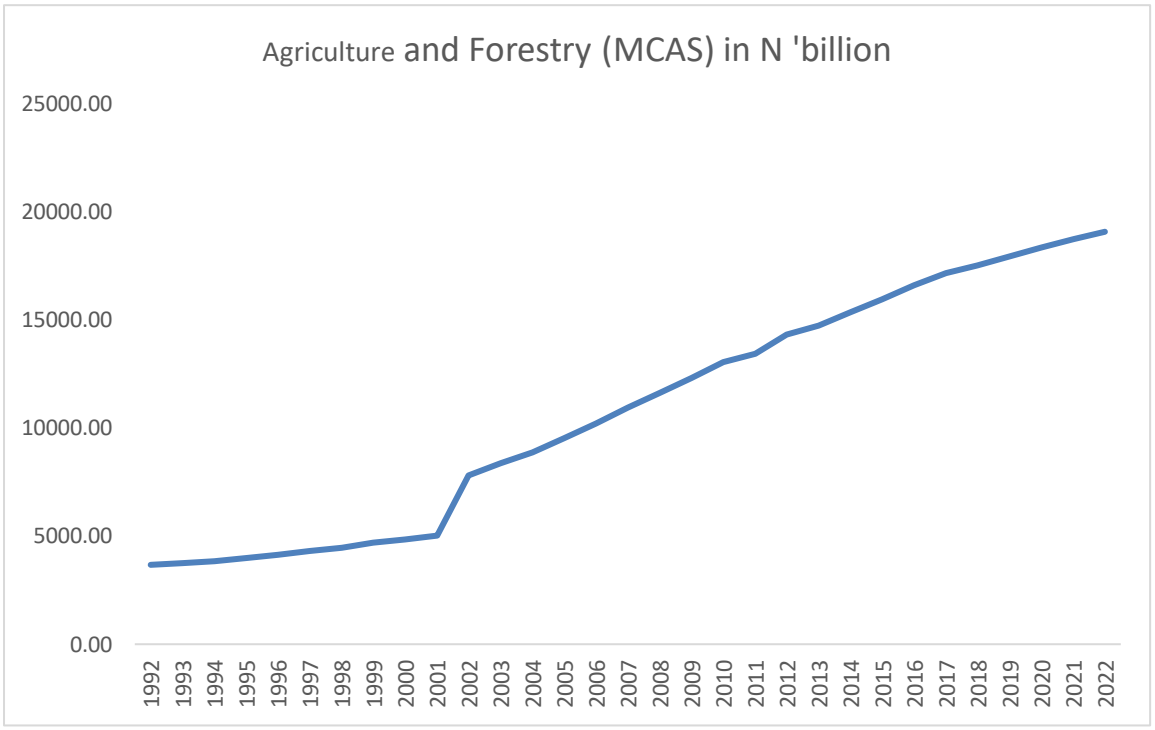

Figure 2:Graphical Trend of Microcredits allocated to Agriculture and Forestry Sector (MCAS)in Nigeria over the period of 1992 to 2022.

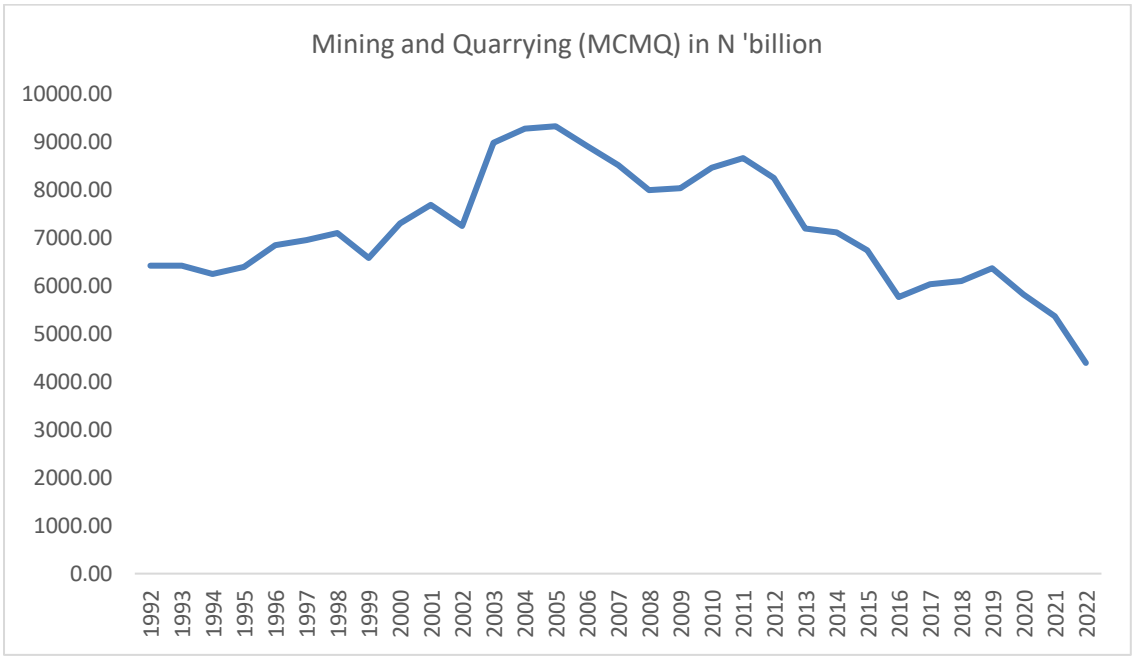

Figure 3: Graphical Trend of Microcredits allocated to Mining and Quarrying Sector (MCMQ) in Nigeria over the period of 1992 to 2022

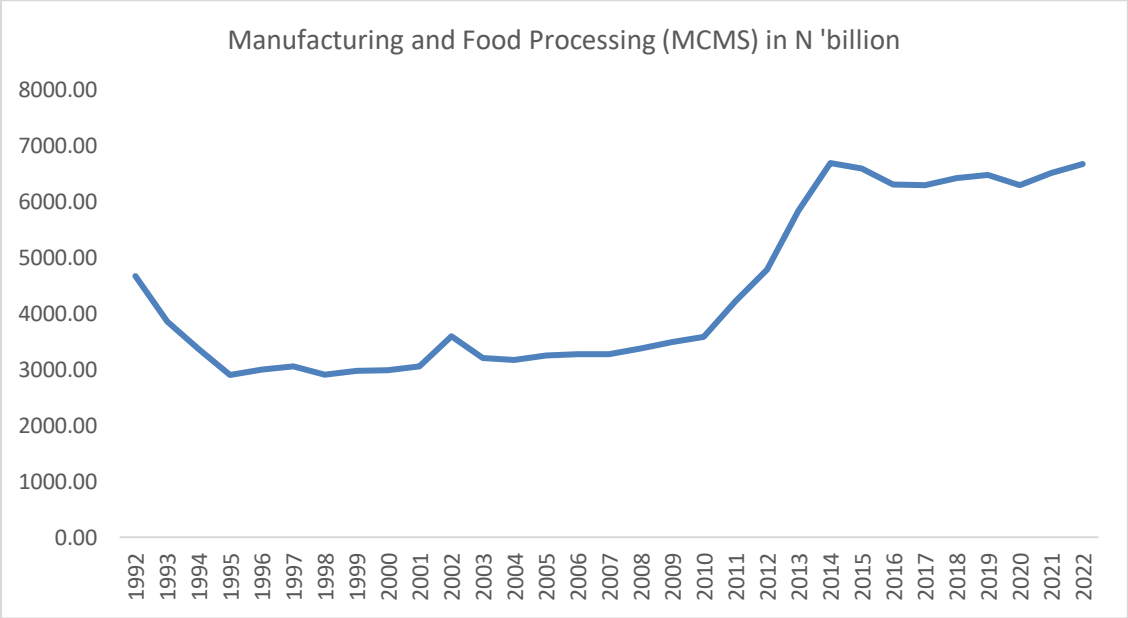

Figure4: Graphical Trend of Microcreditsallocated to Manufacturing and Food Processing Sector (MCMS)in Nigeria over the period of 1992 to 2022

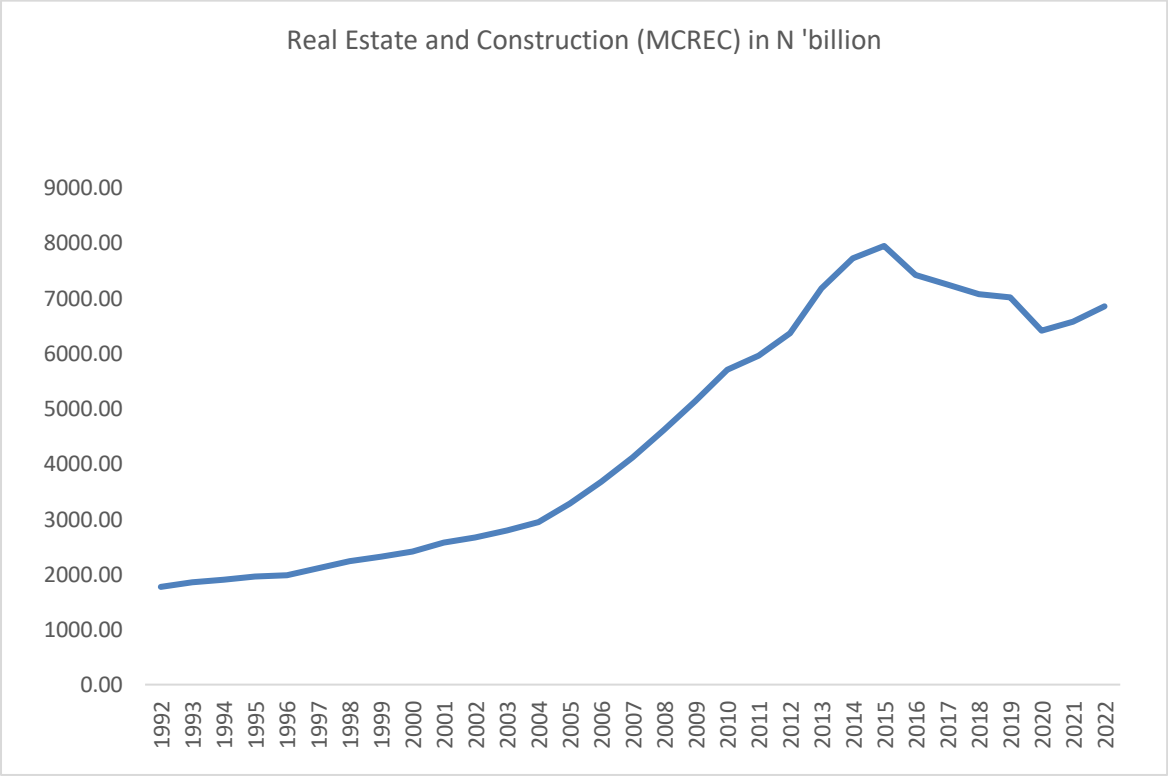

Figure 5: Graphical Trend of Microcredits allocated to Real Estate and Construction Sector (MCREC) in Nigeria over the period of 1992 to 2022.

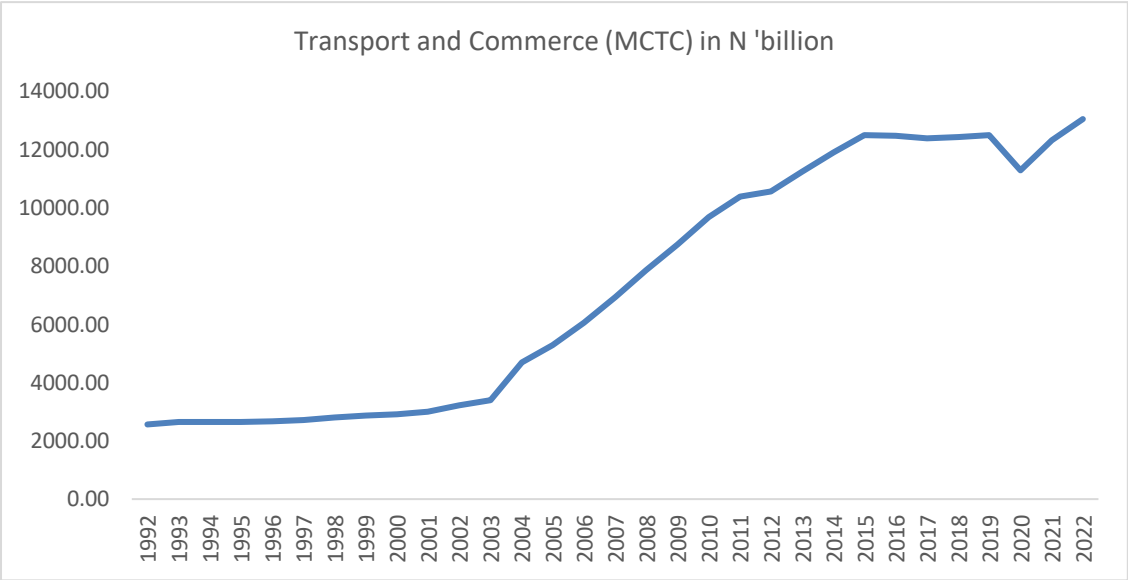

Figure 6: Graphical Trend of Microcredits allocated to Transport and Commerce Sector (MCTC) in Nigeria over the period of 1992 to 2022.

Table 2: Stationarity Test Result at First Difference

Variables	**T-Statistics**	**Augmented Dickey-Fuller test statistic**			**Prob.***	**Order of Integration**	**Conclusion**
		1%	5%	10%			
D(GDP)	-3.850230	-3.679322	-2.967767	-2.622989	0.0008	I(1)	Evidence of Stationarity/Unit Root Absent
D(MCAS)	-4.901974	-3.679322	-2.967767	-2.622989	0.0005	I(1)	Evidence of Stationarity/Unit Root Absent
D(MCMQ)	-5.765186	-3.689194	-2.971853	-2.625121	0.0001	I(1)	Evidence of Stationarity/Unit Root Absent
D(MCMS)	-6.516810	-3.679322	-2.967767	-2.622989	0.0000	I(1)	Evidence of Stationarity/Unit Root Absent
D(MCREC)	-5.772252	-3.689194	-2.971853	-2.625121	0.0001	I(1)	Evidence of Stationarity/Unit Root Absent
D(MCTC)	-7.523444	-3.679322	-2.967767	-2.622989	0.0000	I(1)	Evidence of Stationarity/Unit Root Absent

The stationarity test at the first difference demonstrated significant changes in the series, which provides valuable insights into the economic dynamics and trends within the context of Nigeria.

Table 3: Stepwise Regression

Model Summary

Model	R	R Square (R^2)	Adjusted R Square	Partial Correlation Coefficient (ρ)	Significance Level (p-value)	Std. Error of the Estimate
1	.709[a]	.503	.502	.520	.045	9012.620850
2	.732[b]	.536	.513	.575	.042	7512.741481
3	.822[c]	.676	.549	.700	.012	8534.231465
4	.897[d]	.805	.799	.815	.005	7465.376325
5	.958[e]	.918	.810	.925	.001	6038.368406

a. Predictors: (Constant), MCAS

b. Predictors: (Constant), MCAS, MCMS

c. Predictors: (Constant), MCAS, MCMS, MCMQ

d. Predictors: (Constant), MCAS, MCMS, MCMQ, MCTC

e. Predictors: (Constant), MCAS, MCMS, MCMQ, MCTC, MCREC

This result provides an overview of several statistical measures for each of the models (labeled as Model 1 through Model 5). Each model includes a different combination of predictor variables.

R: This is the correlation coefficient, representing the strength and direction of the measure of association between the dependent variable gross domestic product (GDP) and the predictor variable(s). The value ranges from 0 to 1, with higher values indicating stronger association.
R Square (R^2): This represents the proportion of the variance in the dependent variable gross domestic product (GDP) that is explained by the variations in the predictor variable(s). It ranges from 0 to 1.

Adjusted R Square: This is a modified version of R^2 that accounts for the number of predictor variables in the model.

Std. Error of the Estimate: This is an estimate of the standard deviation of the errors in the regression model. It measures the accuracy of the predictions. Lower values indicate better accuracy.Table 4.9 ranks the model based on their prominence and predictable strength on the variation of gross domestic product (GDP).

Model 1: This model included only one predictor variable, Microcredit allocation to Agriculture and Forestry Sector (MCAS), represented by "a." The model's statistics suggest that Microcredit to Agriculture and Forestry Sector (MCAS), alone explained 50.3% of the variations in gross domestic product (GDP).

The significance level (p-value) for this change in R squared is 0.045, which suggests that the inclusion of MCAS in the model has a p-value which is significant at 0.05 level.

Model 2: This expanded the model to include two predictor variables, Microcredit in Agriculture and Forestry Sector (MCAS) and Microcredit in Manufacturing and Food Processing Sector (MCMS), represented by "b." With these two variables, the model's explanatory power increases to 53.6%, implying that microcredits to manufacturing and food processing sector has made additional (0.536 – 0.503)3% contribution to Nigeria's gross domestic product (GDP) with significance level of 0.042, which is significant at our preferred 0.05 level of significance.

Model 3: In this model, three predictor variables are considered: Microcredit in Agriculture and Forestry Sector (MCAS), Microcredit in Manufacturing and Food Processing Sector (MCMS), and Microcredit in Mining and Quarrying Sector(MCMQ), represented by "c." These variables collectively explained 67.6% of the variability in GDP. Microcredits allocations to mining and quarry sector thus far, made additional (0.676 - 0.536)which is 14%, with significance level of 0.012, which is significant at our preferred 0.05 level of significance.

Model 4: This model incorporated four predictor variables: Microcredit in Agriculture and Forestry Sector (MCAS), Microcredit in Manufacturing and Food Processing Sector (MCMS), Microcredit in Mining and Quarrying Sector(MCMQ), and Microcredit in Transport and Commerce Sector(MCTC), represented by "d." The explanatory power of the model increased significantly to 80.5%. Here, the microcredit allocations to transport and commerce sector has made an additional contribution of (0.805-0.676) which is 12.9% to Nigeria's gross domestic product (GDP), which contribution is significant at 0.005 level, and consequently significant at 0.05 level also.

Model 5: The final model included all five predictor variables: Microcredit in Agriculture and Forestry Sector (MCAS), Microcredit in Manufacturing and Food Processing Sector (MCMS), Microcredit in Mining and Quarrying Sector(MCMQ),Microcredit in Transport and Commerce Sector(MCTC), and Microcredit in Real Estate and Construction Sector(MCREC), represented by "e." This comprehensive model explained a substantial 91.8% of the variations in gross domestic product (GDP). This implies that microcredit allocations to Real Estate and Construction Sector(MCREC) contributed (0.918 – 0.805) which gives 11.3% with significance level of 0.0001, which is very acceptable given our preferred significance level of 0.05.

Practically, these model summaries revealed how the inclusion of additional predictor variables (sectoral microcredits) enhances the model's ability to predict and understand gross domestic product (GDP) variations in Nigeria. As more variables are added, the model's explanatory power increases, meaning it becomes better at capturing the complexities of economic growth.

Conclusion

The model showed that the predictor variables used in Model 1-5 caused more than 50% variability in Gross Domestic Product, thereby suggesting a relationship between microcredit allocations and Gross Domestic Product, however Model 5, a combination model of all five predictors had the greatest impact. Having evaluated the various influences of sectoral microcredit allocation on Nigeria's economic growth, it is concluded that agriculture and forestry sector (MCAS),manufacturing and food

processing sector (MCMS), and the mining and quarrying sector (MCMQ)are valuable in predicting Nigeria's economic growth, while real estate and construction sector (MCREC) and thetransport and commerce sector (MCTC) are not statistically important in predicting Nigeria's economic growth.
Further, while manufacturing and food processing sector (MCMS) as well asmining and quarrying sector (MCMQ) do valuably promote or support Nigeria's economic growth, other sectors do not significantly promote Nigeria's economic growth at 0.05 level of significance. Also all the sectoral microcredit allocations have significantly contributed to the variations (R^2) value in Nigeria's economic growth.

Recommendations

Given that microcredit allocations to the various sectors of the economy show a statistically significant influence on gross domestic product (GDP), public private partnership should be encouraged to promote and encourage more disbursements of microcredits to the real sector.
Policymakers should prioritize microcredit disbursement when designing and implementing microcredit policies. Allocate resources and support to sectors represented by these variables, considering their potential for driving economic growth. Continuously monitor and evaluate the impact of microcredit programs on these sectors and make necessary policy adjustments.

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