



**BANKS' CREDITS AND ECONOMIC GROWTH IN NIGERIA
A SECTORAL ALLOCATION APPROACH**

Mgbataogu, Ifeanyi S.(PhD)¹, Omire Chinweuba C. (PhD)² & Ikue-john, Tamny S. (DBA)³

^{1&2}Department of Finance, Faculty of Management Sciences, University of Port Harcourt, Port Harcourt.

³Department of Finance and Banking, Faculty of Management Sciences, University of Port Harcourt Business School, Port Harcourt.

Email: ifeanyi.mgbataogu@uniport.edu.ng

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A B S T R A C T

Acknowledging the significance of bank credits as a veritable avenue through which the gap in the availability of capital, needed for the production of goods and services, can be bridged for consequent increase in output. The study examined the relationship between deposit money banks' sectoral allocation of credits and economic growth in Nigeria. Specifically, the study investigated the impact of deposit money banks' credit allocated to the production, general commerce, service and 'others' sectors on real gross domestic product in Nigeria. The Augmented Dickey Fuller (ADF) unit root test, Johansen approach to co-integration, error correction model (ECM) and Granger causality test were applied on annual time-series from 1981 to 2022. The findings indicated the presence of long-run (equilibrium) relationship between sectoral bank credit allocation and aggregate output in Nigeria. Specifically, the estimated regression result showed that bank credit allocated to the production, service and 'others' sectors have significant positive impact on real gross domestic product. On the other hand, bank credit allocated to general commerce sector has insignificant impact on real gross domestic product. These results were also corroborated by the outcome of Granger causality tests which indicated a significant bi-directional causality between credit to production sector and real gross domestic product. The study therefore concluded that banks contributed immensely to the growth of the Nigerian economy during the period under review. Following the conclusion, the study therefore recommended among others that banks should be encouraged to lend more to the productive sector (real sector), especially to the preferred agricultural and manufacturing sectors of the economy as they have the capacity to generate employment and drive the economy to sustainable economic growth and development.

Introduction

The intricate relationship between banking credit dynamics and economic growth serves as a pivotal axis in understanding the trajectory of emerging

economies. As the heartbeat of financial systems, bank credit pulsates through the economic veins, influencing and, in turn, being influenced by the broader economic landscape. In the context of Nigeria, a dynamic and rapidly evolving economy, an exploration of the multifaceted interplay between bank credit dynamics and output growth becomes both pertinent and timely. Nigeria, as the largest economy in Africa, stands at the crossroads of economic transformation. With a diverse economic structure encompassing agriculture, manufacturing, services, and an oil-dependent sector, the nation navigates a complex path toward sustainable growth. In this context, the role of bank credit emerges as a critical factor shaping the contours of economic development. The dynamic nature of Nigeria's economy demands a nuanced examination of how the ebb and flow of credit within the banking sector resonates through the broader economic canvas.

Bank credit, as the aggregate sum extended by financial institutions to individuals, businesses, and the government, serves as the lifeblood of economic activities. Its efficient allocation is not merely a financial transaction but a catalyst for private investment and an engine for economic activity (Luca & Spatafora, 2012). In the Nigerian context, where economic diversification and sustainable development are imperative, understanding the nuances of how bank credit influences output growth becomes paramount. Monetary authorities wield credit policies as potent tools in steering macroeconomic growth. Through strategic deployment, credit policies can channel investments into productive and value-added ventures, propelling real growth within the economy.

However, this power is double-edged, as the mismanagement of credit can sow the seeds of financial instability (Gosh, 2010). In empirical literature, there have been age-long divergences among scholars on the nexus between banks credit and economic performance (Abina, 2020; Asuquo, Onuchuku & Nteegah, 2021). These studies are generally diverse in terms of content, context, dispensation and geographical considerations (Okosodo & Imoughele, 2019). Interestingly, a preponderance of these studies are generic and tend to be overly centered in western economies (Gupta & Aggarwal, 2022; Duramany-Lakkoh, Jalloh & Jalloh 2022), others focus on solitary sectors (Onuchuku & Nteegah, 2021; Okosodo & Imoghele, 2019; Onwioduokit & O'Neill 2023), etc.), focus on either manufacturing, service, real or financial sectors (Nakazi & Nathan, 2019) and utilize solitary exogenous variables (James & Anthony, 2019). Several exogenous variables have been used to show the potency of banks' sectoral credit allocation in influencing economic growth. These include (but not limited to) liquidity (Okafor, Ezeaku & Ugwuegbe, 2016), money supply (Creel, Hubert & Labondance, F. 2023). These, though apt and adequate enough are by no means exhaustive in capturing the level of economic expansion or contraction as a consequence of such credit allocation. Therefore, focusing also on the other sectors and having real gross domestic product as a measure of the aggregate economic output is pertinent.

Conceptual Framework

Theoretical Framework:

There are two major theories underlying Micro finance credits and activities. They include the financial intermediation theory and bank lending theory - Loan-pricing theory.

The Theory of Financial Intermediation

This theory is predicated on the intermediation functions of Banks, Banks by nature of their operations are net risk takers. Their intermediation capacity emanates from their ability to mobilize funds. Credits when effectively sent, hypothetically constitutes an important vehicle for transmission of the impacts of saving money operations to the economy. Schumpeter and Opie (1934) see financial organizations as assuming run of the mill request taking after parts and just capacity to benefit and/or bolster endeavour.

Loan Pricing Theory

Banks cannot always set high interest rates. Banks should consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship (Stiglitz and Weiss, 1981). If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour or so-called borrower moral hazard since they are likely to take on highly risky projects or investments (Chodecai, 2004). From the reasoning of Stiglitz and Weiss, it is usual that in some cases we may not find that the interest rate set by banks is commensurate with the risk of the borrowers.

Empirical Literature

Empirical literature abounds with studies which have tried to investigate the nature of interrelationship and causality between bank credits and economic performance. Some of them are reviewed here in our study. Kurotamunobaraomi and Giami (2024) investigated the relationship between sectoral credit allocation of deposit money banks and economic growth in Nigeria. Sectoral credit allocation was proxied by credit allocation to the agricultural sector, manufacturing sector as well as mining and quarrying sector, while economic growth was measured by gross domestic product. Consequently, to empirically conduct this study, the correlational research design was adopted, thus, secondary time-series data for the credit allocated to the sectors by all (24) deposit money banks that span 2003 to 2022 were obtained from statistical bulletin of the Central Bank of Nigeria and analysed using graphs and inferential statistics; specifically, a multiple linear regression model. From the analyses, the study found a negative and insignificant relationship between deposit credit banks' allocation to agricultural sector and gross domestic product, positive and significant relationship between banks' credit allocation to manufacturing sector and gross domestic product, as well as banks' a positive but insignificant relationship between sectoral credit to mining and quarrying and gross domestic product

Abdulmalik, Emmanuel and Ahmed (2023) examined the effect of deposit money bank credit on the agricultural sector on economic growth in Nigeria. The study adopts the ex post facto research design and secondary data was used. The data used for the estimation of the model is extracted in respect of deposit money bank credit to the agricultural sector and real gross domestic product while the study covered the periods of 1990 to 2021 (32 years). The hypotheses were tested using a robust ordinary least square regression model after conducting some diagnostics tests like the Skewness/Kurtosis Normality Test, Pearson Correlation and Heteroscedasticity test. The results show that depositing money bank credit to the agricultural sector has a significant positive effect on the real gross domestic product in Nigeria for the period under review.

Abina (2020) examined sectorial allocation of bank credits and economic development in Nigeria. The study made use of human development index as proxy for dependent variable measuring economic development while bank credits to public sector, manufacturing, agricultural, mining general commerce sector, real estate and construction, was used in the study as independent variables. All data were obtained from Central Bank of Nigeria statistical bulletin and index-mudi which span across 1985 to 2019. Data stationarity was ensured using the Augmented Dickey Fuller statistics, while the error correction model was applied to as the statistical tool for acceptance of hypothesis. The results of the analysis showed that bank credits to manufacturing, mining and general commerce sector contributed negatively to human development index while bank credit to public sector, real estate and agricultural sector contributed positively to human development index.

Onyema and Agada (2020) provided empirical evidence on how banks' credit to the agricultural sector has grown agriculture in Nigeria. The utilized secondary time series data, analyzed using a collection of econometric techniques which include the Vector Error Correction Model (VECM), Cointegration and Granger Causality test to show that the volume of credit advanced to the agricultural sector cannot spur growth, while prime and maximum lending rates contribute to sectoral growth. There is also evidence of long run relationship between the variables; as well as a unidirectional causal relationship from agricultural sector fraction of GDP to the credit advanced to the agricultural sector.

Chuba and Hitlar (2022) observed that the effect of commercial banks' credit allocated to agricultural sector on economic growth in Nigeria are mixed. In their work, the authors set out is to evaluate the effect of commercial banks' credit allocated to agricultural sector on economic growth in Nigeria from 2014q1 to 2020q4 using error correction model (ECM). The results of the investigation revealed that commercial banks' credit allocated to agricultural sector had a significant positive effect on economic growth in Nigeria. A 1% increase in commercial banks' credit allocated to agricultural sector led to 23.37% increase in real GDP in Nigeria. The commercial banks' credit allocated to other sectors did not spur economic growth in Nigeria.

Asuquo, Onuchuku and Nteegah (2021) used descriptive statistics, Phillips-Perron unit root test, cointegration test and error correction mechanism to explore impact Deposit Money Bank (DMBs) credit on manufacturing sector performance in Nigeria between 1981 and 2019. The unit root test results show that all the variables are stationary at first difference. It was observed from the Johansen cointegration test that the variables have long run relationship. This provides the pre-condition for fitting the error correction model. The parsimonious ECM results revealed deposit money banks' credit to the manufacturing sector impacted positively on the performance of manufacturing sector. This implies that increase in deposit money banks' credit stimulated output in the sector. It further observed from the results that interest rate was significant in explaining changes in the performance of the manufacturing sector output. This confirms the critical role of cost of funds in investment decision and the performance of the economy at large. Inflation rate was also significant in explaining changes in the performance of the manufacturing sector.

Onwioduokit and O'Neill (2023) investigated what the regarded as challenges faced by investors in Nigeria despite government efforts to promote credit expansion in the private sector. The primary obstacle identified is financial exclusion, coupled with limited access to credit. The study spans from 1980 to 2022 and measures credit expansion using parameters such as credit to the private sector and deposits at rural bank branches. Other relevant variables, including exchange rates and interest rates, are considered. Economic growth, indicated by the growth rate of real gross domestic product, serves as the benchmark for assessing the impact of credit expansion. The Autoregressive Distributive Lag (ARDL) estimation technique is used to analyze short and long-term relationships among variables. The study establishes a long-term relationship among the variables, emphasizing the substantial impact of credit on Nigeria's economic growth. The Error Correction Mechanism (ECM) results within the ARDL framework underscore this impact.

Anyanwu, Ananwude and Okoye (2017) set out to empirically assess the impact of commercial banks' lending on economic development of Nigeria from 1986 to 2015 by specifically ascertaining the impact of commercial banks' lending on real gross domestic product and index of industrial production. The data sourced from the Central Bank of Nigeria statistical bulletin were diagnosed for serial correlation, heteroskedasticity and Ramsey Reset model fitness specification and stationarity. The Johansen co-integration envisaged a long run relationship between commercial banks' lending and gross domestic product but such could be said for index of industrial production. The granger impact assessment result shows that commercial banks' lending has significant impact on real gross domestic product and real gross domestic product on the other hand, has significant impact on credit to private sector. Index of industrial production was not significantly influenced by commercial banks' lending activities. The vector error correction model depicts that for achievement of long-term growth and development of the Nigerian economy, commercial banks' lending is very pivotal as the high interest rate charged by commercial banks remain a threat to the positive influence of banks' credit to the economy.

Ayeomoni and Aladejana (2016) while acknowledging the significant role of agricultural sector cannot be underestimated in any nation, set out to examine the relationship between agricultural credit and economic growth in Nigeria. The study employed time series data from Central Bank of Nigeria, Statistical Bulletin and National Bureau of Statistics which spanned from 1986-2014. This study carried out Auto-Regressive Distributed Lag (ARDL) approach to investigate the variables. The findings showed that short and long run relationship existed between agricultural credit and economic growth in both short and long run respectively. Moreover, real exchange rate and private domestic investment as control variables had direct effect on economic growth whereas inflation rate revealed an inverse relationship in the model. The study concluded that economic growth is influenced by dynamic variables such as credit to agricultural sector, real exchange rate, real interest rate, private domestic investment and inflation rate in Nigeria.

Olowofeso, Adeboye, Adejo, Bassey and Abraham (2017) investigated the relationship between credit to agriculture and agricultural output in Nigeria by means of nonlinear autoregressive distributed lag (NARDL) model using a time series data from 1992Q1 to 2015Q4. Results show no evidence of asymmetry in the impact of credit to output growth in the agricultural sector (positive and negative changes) in the short-run, but different equilibrium relationships exist in the long-run. The dynamic adjustments show that the cumulative agricultural output growth is mostly attracted by the impact of the positive changes in credit to agriculture with a lag of four quarters of the prediction horizon. This according to the authors calls for the need for a policy on moratorium on credit administration to agricultural sector

Ogunmuyiwa, Okuneye and Amaefule (2017) examined the impact of bank credit on growth of the manufacturing sector in Nigeria. Time series data from the return to democratic rule in 1999 to 2014 were fitted into the regression model using econometric techniques particularly the Augmented Dickey-Fuller (ADF) test and the Autoregressive Distributed Lag (ARDL) model. Empirical findings show that bank credit to the private sector has a positive impact on the manufacturing sector. Albeit, a significant impact was found between bank credit and manufacturing sector's growth, the policy implication of this finding is that bank credits drive manufacturing output in Nigeria.

Okosodo (2016) examined agricultural credit on the growth and development of the Nigerian economy. This research examined banking policy on agricultural credit development in Nigeria between 1980-2014. The data used in this research are obtained mainly from secondary sources. The research technique employed in this research is the recent bounds testing cointegration approach, unit root test and error correction mechanism. The study reveals that there is long run relationship between agricultural sector and economic growth in Nigeria. The study also reveals that Government expenditure in Agricultural sector contribute moderately to the growth of the Nigerian economy.

Outside the shores of Nigeria, Duramany-Lakkoh, Jalloh and Jalloh (2022) noted that banking sector development is considered as an essential driver of economic growth.

The authors examined the impact of the banking sector on the economic growth of Sierra Leone using indicators like bank liquidity reserve to bank asset ratio, domestic credit to private sectors, interest rate spread, gross domestic savings and deposit interest rate, and gross domestic product using yearly data from the period of 2001 to 2017. An empirical model was carried out using ordinary least square regression. From the outcomes of the regression, analysis, and results, GDP is strongly influenced by some of the banking indicators especially domestic credit to the private sector. It is seen that domestic credit to the private sector has a positive and significant impact on GDP, while deposit on interest rate has a positive but insignificant impact on GDP. The other indicators such as bank liquidity reserve, interest rate spread, and gross domestic savings neither have positive nor significant to GDP. Domestic credit to the private sector tends to have a positive impact.

Gupta and Aggarwal (2022) set out to empirically test the impact of sectoral credit amongst Indian sectors on economic growth. This was achieved by studying the relation between sectoral credit, liquidity and economic growth. The results of the study prove that the sectoral credit was seem to be working on the growth of Indian markets in the long run. On the contrary, it was found that in the short run not only credit was an important factor which impacted the growth of the economy but increase in broad money liquidity, i.e., M3 also impacted sectoral credit which was in favour of our research hypothesis. Similarly, it was also found that past volatility change in terms of different sectors growth was impacting current economic growth again showing the applicability of the concept of increase in sectoral credit and liquidity impacts the economic growth in the Indian markets. However, the external shocks in the variables affect the stable equilibrium in the short run while these stability in the markets were maintained in the long period of time

Creel, Hubert and Labondance (2023) explored the role of banking fragility for the relationship between private credit and economic growth and bridges two literatures, one on the link between credit and economic growth and the other on the effects of banking fragility on credit dynamics. We consider two types of banking fragility on both the asset and liability sides: nonperforming loans and the ratio of bank capital to assets. Using a standard growth model framework and a dynamic generalized method of moment panel estimator on data for European Union countries, we find that banking fragility has a negative effect on economic growth. A consequence of considering banking fragility is that credit appears to have a positive effect on economic growth only when banking fragility is relatively low

Abiodun, Alabi, Adebisi and Olaoye (2021) while acknowledging the significance of credit extension to boost the development of SMEs, examined the influence of SMEs bank finance on economic growth of Nigeria. The specific objectives examined in their study were to; (i) to examine the effect of loan and advances to agriculture, forestry and fishing industry on economic growth; (ii) to identify comparison between loan and advances to general commerce industry with that of agricultural related industry. The study analyzed data collected from eleven indigenous deposit money banks in Nigeria from 2010 to 2019. Secondary sources of

data were explored to achieve the stated objectives of the study. Fixed and random Effect regression analysis method were adopted for the analysis. The study found that loans and advances to SMEs in agricultural sector have significant positive effect on economic growth with (p-value 0.016, $P < 0.05$). The study also found positive insignificant impact of loan and advances to general commerce sector on GDP. The findings also revealed that inflation rate has significant negative relationship with economic growth.

Akintola and Adesanya (2021) also examined the contributions of deposit money banks to economic growth in Nigeria; ultimately finding that money supply has a significant positive effect on economic growth, interest rate has a significantly negative influence on economic growth, also it is seen that banks credit have positive and significant effect on economic growth.

Asuqwo, Onuchuku and Allwell (2021) with data from 1981 to 2019 show that deposit money banks' credit to manufacturing companies' impact positively on manufacturing sector's performance, inflation rate was also significant in explaining changes in manufacturing sector performance, and interest rate on credit has a positive and insignificant effect on manufacturing sector's output.

Finally, Nweke and Korgbeelo (2022), acknowledging the significance of bank credits as a veritable avenue through which the gap in the availability of capital, needed for the production of goods and services, can be bridged. examined the impact of deposit money banks' credit allocated to the real sector on the development of the real sector in Nigeria. Specifically, the study investigated the impact of deposit money banks' credit allocated to the agricultural, manufacturing, mining and quarrying, and real estate and construction sectors on the development of the real sector in Nigeria. Philips-Perron unit root test, autoregressive distributed lag (ARDL) approach to co-integration, error correction model (ECM) and Granger causality test were applied on annual time-series from 1981 to 2020. The findings indicated the presence of long-run (equilibrium) relationship between sectoral bank credit allocation and real sector development in Nigeria. The estimated regression result showed that bank credit allocated to the agricultural, manufacturing, and real estate and construction sectors have insignificant positive impact on real sector development. On the other hand, bank credit allocated to mining and quarrying sector has significant positive impact on real sector development while bank lending rate (a control variable) has significant negative impact on real sector development in Nigeria.

Gap in Literature

From the foregoing, there are divergent perspective on the nature of relationship and effect of bank credit on economic growth, hence no harmony on the alleged nexus between bank credit and economic growth. It is against this backdrop that this study examines the effect of sectoral allocation of deposit money bank's credit on the growth of Nigerian economy from 1981 to 2022. The studies reviewed with respect to the effect of deposit money bank credit on the economic growth and development of various countries of the world reported mixed results. The bulk of the

empirical studies abroad revealed that deposit money bank credit propels economic growth.

In the context of Nigeria, scholars focused on economic growth and industrial production. The result of most of these studies showed the significant effect of bank credit on economic and industrial growth in Nigeria. This study in cognizance of recent developments in the Nigerian economy, takes a new dimension by using more robust data dating back to 1981 and extending to 2022, and disaggregating the real economy into four major components: production, commerce, service and others as contained in the Central Bank of Nigeria (CBN) Statistical Bulletin of 2022. The disaggregation of the economy into different sectors were obviously absent in the works of Anyanwu, Ananwude and Okoye (2017), Ayeomoni and Aladejana (2016), Okosodo (2016), Olowofeso et al. (2017), as well as Ogunmuyiwa, et al. (2017) among others.

Materials and Methods

The researcher adopted the Ex-post facto research design and the data for the study were derived mainly from the Central Bank of Nigeria Bulletins 2022 and will be estimated using Econometric Views (E-Views) version 10 statistical application package.

Operational Measures of Variables

Dependent Variable

Gross Domestic Output: is captured by amount of all intermediate processes required for the production, integration and services related to all activities and services over the study scope.

Independent Variable

Banks' credits to Production: This entails all banks' credits disbursed to Agriculture, Manufacturing, Mining and Real Estate Construction. This is expected to be positively related to aggregate national output i.e. Gross Domestic Product.

Banks' credit to Commerce: This entails all credits disbursed for domestic trade, exports, imports and bills discounted. This is expected to be positively related to aggregate national output i.e. Gross Domestic Product.

Banks' credit to Service: This entails all credits disbursed for public utilities, transport and communications and financial institutions. Again, this is expected to be positively related to aggregate national output i.e. Gross Domestic Product.

Credits to 'Others' sector: This entails all credits disbursed to government, personal and professional and miscellaneous. This is expected to be positively related to aggregate national output i.e. Gross Domestic Product.

Model Specification

RGDP = F (PROD, COMM, SERV, OTHR)..... (1)

Statistically;

$$TCR_t = \alpha_0 + \beta_1 PROD_t + \beta_2 COMM_t + \beta_3 SERV_t + \beta_4 OTHR_t + \varepsilon_t \text{ ----- (1)}$$

The a priori expectation is summarized as follows:

$\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, and $\beta_4 > 0$

Where;

RGDP = Real Gross Domestic Product from 1981 to 2019

PROD = Banking Systems' Credit to the Production Sector of the economy from 1981 to 2022

COMM = Banking Systems' Credit to the General Commerce Sector of the economy from 1981 to 2022

SERV = Banking Systems' Credit to the Service Sector of the economy from 1981 to 2022

OTHR = Banking Systems' Credit to the "Others" Sector of the economy from 1981 to 2022

Analytical Tools and Test Specifications

Given, the main objective of this study it becomes fundamental to examine the properties of the time series data to ascertain their stationarity properties or otherwise, the nature of long run relationship as well as correct any form of distortions that may arise in the short run and also examine the nature and direction of causal relationship. Thus, the following tests will be carried out to ensure that the key objectives are achieved – Stationarity test, Cointegration test, Error Correction Estimates and Granger Causality Test. Therefore, this subsection is further subdivided as follows:

Stationarity Tests

Stationarity or Unit root tests seek to evaluate the stationarity properties of the time series variables employed as both a necessary and pre-condition for estimating the co-integration equations. In this study, the Augmented Dicker-Fuller (ADF) tests are employed to confirm; (a) stationarity of the time series data employed, (b) avoid spurious estimates as a consequence of (a) above and (c) confirm the order of integration of the time series variables. The decision rule is that the absolute values of the ADF-statistics should be higher than those of the Test Critical Values at 1%, 5% and 10% levels of significance for all the study variables employed.

Cointegration Tests

Co-integration tests are carried out in order to ascertain the nature of long-run relationship between the variables of study. This is done through the Johansen's Co-integration test to confirm the existence of a long-run relationship between the variables. The decision rule is that the 'Trace Statistic' is greater than the 'Critical Value'.

Error Correction Estimates

It is theoretically expected that some deviations from long run relationship could occur due to distortions in any of the variables in the short run. In this direction, Obamuyi (2009) suggest that these adjustments are necessary for policy implications. Consequently, the Error Correction Model (ECM) is employed.

Test for Causality

The test for causality or feedback effects between the specified variables was executed through the employment of Granger Causality Technique in order to ascertain the extent to which the study variables do promote and/or support themselves in an economic or financial setting. A time series X is said to Granger-cause Y if in a series of regression equations, the inclusion of lagged values of X improves the explanations for Y and vice versa.

Granger Causality relationships are typified by equations (2) and (3) below;

$$(Y)_t = \alpha + \sum_{i=1}^m \beta_i (Y)_{t-i} + \sum_{j=1}^m \gamma_j (X)_{t-j} + U_t \dots\dots\dots(2)$$

$$(X)_t = \alpha + \sum_{i=1}^m \beta_i (X)_{t-i} + \sum_{j=1}^m \gamma_j (Y)_{t-j} + \varepsilon_t \dots\dots\dots(3)$$

Where Y_t and X_t are the time series variables under test, while U_t and ε_t are serially independent random vectors with zero mean and finite covariance matrix

PRESENTATION OF EMPIRICAL RESULTS

Data Presentation

The data presented below shows the total annual credit extended by the banking system to different sectors of the economy, classified as Production (PROD), General Commerce (COMM), Service (SERV) and Others (OTHR) as well as Nigeria's Real Gross Domestic Product (RGDP) from 1981 to 2022.

TABLE 4.1: Credits extended by the banking system to Production, General Commerce, Service and Others sectors of the economy as well as Nigeria's Real Gross Domestic Product (RGDP) from 1981 to 2022.

YEAR	RGDP (#'B)	PROD (#'B)	COMM (#'B)	SERV (#'B)	OTHR (#'B)
1981	19549.5629	5.0889	1.475	2.6233	0.8707
1982	18219.26831	6.0035	1.8265	3.1293	1.1425
1983	16228.8071	6.3724	1.7272	3.4368	1.2847
1984	16048.30775	6.6749	1.8227	3.5151	1.3136
1985	16997.51827	7.2722	2.0513	3.5772	1.3208
1986	17007.77468	9.3539	2.7548	4.5504	1.7973
1987	17552.10347	10.527	3.0374	5.1728	1.8321
1988	18839.55006	12.3799	3.6162	4.9522	2.2291
1989	19201.1646	13.6405	4.2223	5.7231	2.6444
1990	21462.73372	15.6783	4.8387	6.7086	3.6132
1991	21539.61383	20.039	5.1016	7.2092	4.058
1992	22537.09578	27.2019	7.3925	10.1567	5.3782
1993	22078.07214	40.6929	13.494	17.9133	7.0591
1994	21676.85142	52.5809	7.6131	7.6131	33.9899
1995	21660.48707	95.441	19.4429	19.4429	29.6857
1996	22568.86673	120.5517	32.9982	32.9982	15.8872
1997	23231.12313	131.3734	16.3687	16.3687	237.8084

1998	23829.75843	146.7616	29.7702	29.7702	96.3637
1999	23967.59142	171.4892	18.7721	18.7721	132.5036
2000	25169.53879	214.6123	25.3074	25.3074	268.3825
2001	26658.62129	333.2122	34.5325	34.5325	428.4201
2002	30745.19206	363.4944	26.7092	26.7092	564.4252
2003	33004.79634	452.3888	34.4674	34.4674	723.1769
2004	36057.73778	530.9079	31.347	31.347	956.9878
2005	38378.79606	573.1319	26.4273	26.4273	1377.152
2006	40703.68138	746.6631	52.6863	52.6863	1724.9485
2007	43385.87708	1127.8678	66.5511	66.5511	3619.0699
2008	46320.01494	2352.896857	220.0735306	2109.91524	3336.588014
2009	50042.36065	3098.030318	1245.078673	3327.04515	2487.067604
2010	54612.26418	2964.450392	943.189422	2686.27579	2055.704243
2011	57511.04177	3057.221118	791.8565862	2430.60688	1824.898006
2012	59929.89304	3695.961762	756.5752281	2001.18038	2452.88813
2013	63218.72173	4406.171775	766.7013576	2696.82564	2902.596919
2014	67152.78584	4191.783978	2609.544959	4010.32734	4687.309736
2015	69023.92994	4470.026741	2780.629677	4338.37626	4277.80191
2016	67931.23593	6350.874471	3410.138133	5226.25889	4540.152134
2017	68490.98034	6301.190115	3526.138943	5478.22461	3961.179698
2018	69799.94195	6409.966138	3457.192129	5243.64061	3480.596108
2019	71387.82667	6822.479378	3882.965105	5818.38053	4546.905809
2020	70014.37185	8183.067391	4526.183333	6725.1224	5465.29848
2021	72393.67344	9777.262117	5648.970211	8117.54889	6483.382422
2022	74639.46894	9154.627781	5333.476845	7491.21038	6156.265808

Source: Central Bank of Nigeria Statistical Bulletin 2022

Descriptive Statistics

Table 4.2 reports some summary statistics that describe the distributional properties of the study variables. The statistics reported include mean, maximum, minimum, standard deviation, skewness and kurtosis. The table also shows the normality test based on Jarque and Bera (1981).

Table 4.2: Descriptive Statistics for the study variables

	RGDP	PROD	COMM	SERV	OTHR
Mean	38589.74	2058.986	961.3111	1623.871	1640.523
Median	28701.91	348.3533	30.55860	30.55860	496.4227
Maximum	74639.47	9777.262	5648.970	8117.549	6483.382
Minimum	16048.31	5.088900	1.475000	2.623300	0.870700
Std. Dev.	20854.23	2891.994	1652.460	2469.348	2009.223

Skewness	0.527287	1.276919	1.593753	1.252109	0.929567
Kurtosis	1.639848	3.387354	4.157707	3.217694	2.545993
Jarque-Bera	5.183743	11.67624	20.12584	11.05738	6.409381
Probability	0.074880	0.002914	0.000043	0.003971	0.040571
Sum	1620769.	86477.41	40375.07	68202.60	68901.98
Sum Sq. Dev.	1.78E+10	3.43E+08	1.12E+08	2.50E+08	1.66E+08
Observatio ns	42	42	42	42	42

Source: Author's Computation using E-views 10 software

The descriptive results in table 4.1 show that real gross domestic product (RGDP) has an average value of 38589.74 billion, reaching a maximum level of 74639.74 billion and a minimum level of 16048.31 billion over the study period. Credits extended to Production, General Commerce, Service and Other sectors averaged 2058.99 billion, 961.31 billion, 1623.87 billion and 1640.52 billion respectively. The maximum values to each of the sectors are 9777.26 billion, 5648.97 billion, 8117.549 billion and 6483.382 billion while the minimum values stand at 5.09 billion, 1.48 billion, 2.62 billion and 0.87 billion respectively.

For the distribution of the data, the results indicate that all the variables of study are positively skewed, with credits to production, general commerce and service sectors leptokurtic, with the kurtosis coefficients being 3.39, 4.16 and 3.22 respectively. This indicates that the data is fairly normally distributed. Further, the Jarque-Bera statistic is substantially large with zero probability, indicating that the test of normality is also largely significant. The null hypothesis of normal distribution is therefore rejected at 5% level of significance. Thus, we conclude that the data are normally distributed as evidenced by positive skewness and kurtosis coefficients that are largely within acceptable range of 0 and 3.

Graphical plots of the data

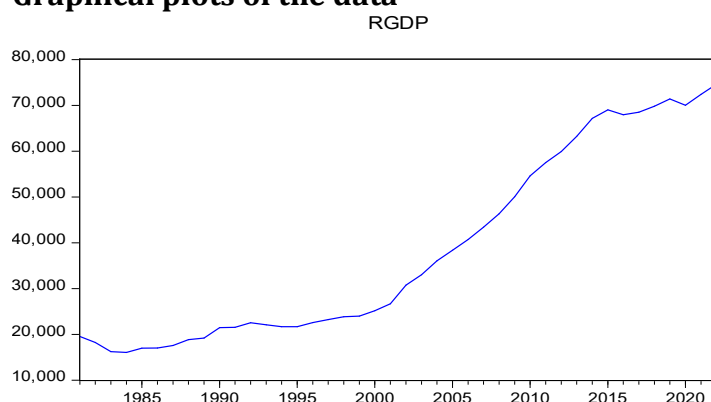


Fig. 4.1: Graphical plot of Real Gross Domestic Product

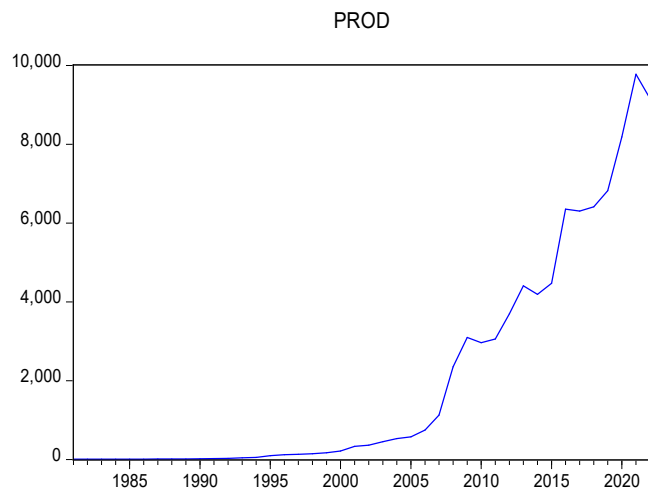


Fig. 4.2: Graphical plot of Credits to Production sector

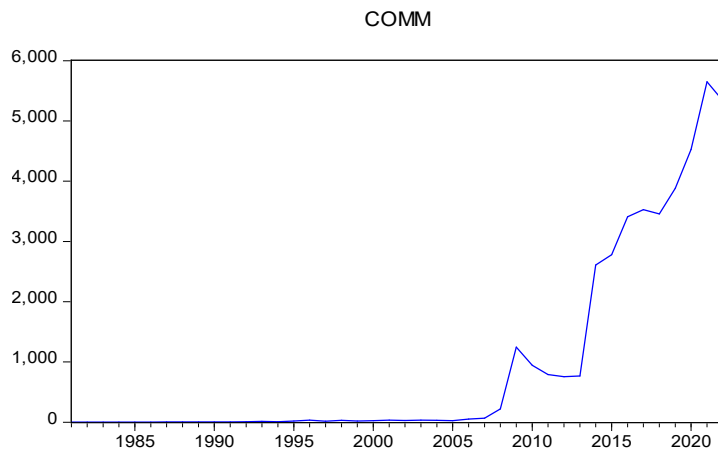


Fig. 4.3: Graphical plot of Credits to General Commerce sector

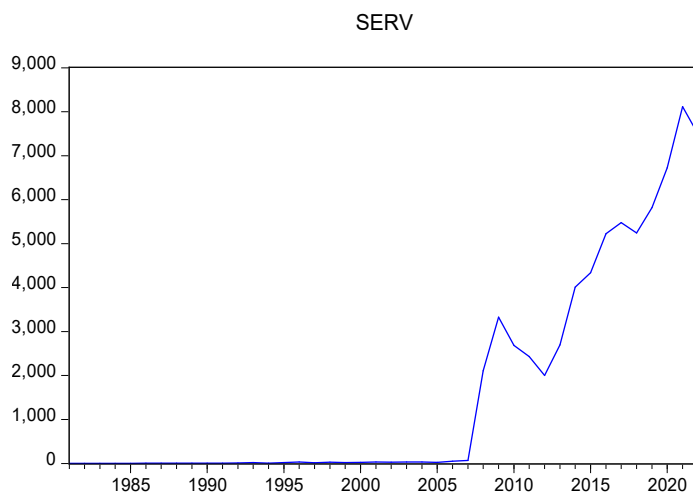


Fig. 4.4: Graphical plot of credits extended to the Service sector

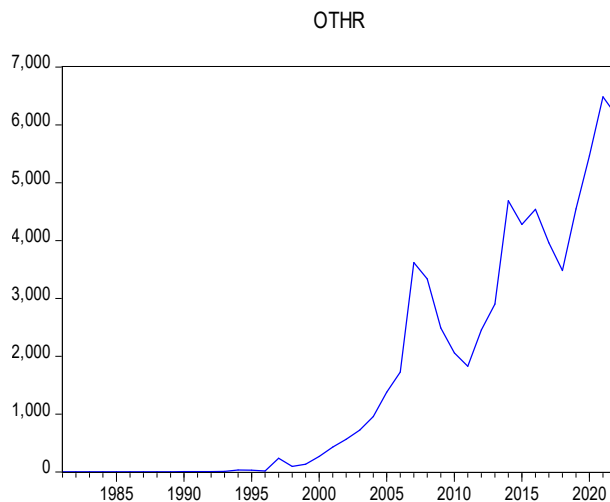


Fig. 4.5: Graphical plot of credits extended to Other sectors

A cursory look at the data plots above reveals that the real gross domestic product though shows an upward trend, there was a slow growth from 1981 to around 2001 when a sharp increase is observed till around 2014. After this point, another trend of sluggish growth is noticed. Credit extension to different sectors of the economy flattened out and continued 2001 for Production sector, 2007 for General Commerce sector when an increase was observed for the first time followed by up and down movement till the end of the study period. The same trend is observed for Service sector while credits to 'Other' sector after the initial lull shows somewhat inconsistent movement till the end of the period. Thus, there is need to conduct a unit root test on each of these data series to empirically confirm their stationarity status

Econometrics Data Analysis

In this section, the results from the test of the hypotheses carried out and its interpretation is presented. Data for this research was analyzed using the Econometric Views (E-Views) version 10.1 statistical application packages.

Stationarity Tests

The result of stationarity (unit root) test is shown in the table 2 below;

Table 4.3: Results of ADF (Unit Root) Tests:

Variables	ADF t-statistics	Critical value			Order	Probability
		1%	5%	10%		
D(RGDP)	-5.331217	-3.605593	-2.936942	-2.606857	I(1)	0.0001
D(PROD)	-4.944186	-3.605593	-2.936942	-2.606857	I(1)	0.0002
D(COMM)	-5.811791	-3.605593	-2.936942	-2.606857	I(1)	0.0000
D(SERV)	-4.624302	-3.605593	-2.936942	-2.606857	I(1)	0.0006
D(OTHR)	-5.396998	-3.605593	-2.936942	-2.606857	I(1)	0.0001

Source: Author's Computation using E-views 10 software

The Unit root (ADF) results presented in table 4.3 above show that for all the variables Real Gross Domestic Product (RGDP), credits extension to Production (PROD), General Commerce (COMM), Service (SERV) and Others (OTHR) sectors of Nigerian economy, the absolute values of the ADF Test Statistics for all the study variables are relatively higher than all the associated critical values at various levels of significance (1%, 5% and 10%).

Further, the variables are stationary at first difference and are consequently said to be integrated of order 1; i.e. I (1). Their associated probability values show that they are all significant at 0.05 level of significance.

Co-integration Test Results

The results of the Johansen's Co-integration tests are presented in table 3 below;

Table 4.4: Results of Johansen's Co-integration Tests

Date: 10/04/24 Time: 18:40				
Sample (adjusted): 1984 2022				
Included observations: 39 after adjustments				
Trend assumption: Linear deterministic trend				
Series: D(RGDP) D(PROD) D(COMM) D(SERV) D(OTHR)				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.734298	130.2824	69.81889	0.0000
At most 1 *	0.630443	78.59252	47.85613	0.0000
At most 2 *	0.457867	39.76993	29.79707	0.0026
At most 3 *	0.259510	15.89245	15.49471	0.0435
At most 4 *	0.101524	2.175176	3.841466	0.0810
Trace test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's Computation using E-views 10 software

The results of Johansen's maximum likelihood co-integration above do not indicate any full-rank trend. They show that there are four co integrating equations. This is strong evidence to suggest that there exists a long-run relationship among the study variables. Therefore, the null hypothesis of no co-integration is rejected.

Presentation of Error Correction Model Estimates

The results of the Error Correction Model are shown in table 4.5 below;

Table 4.5: Results of the Error Correction Model (ECM)

Dependent Variable: D(RGDP)				
Method: Least Squares				
Date: 10/04/24 Time: 18:58				
Sample (adjusted): 1983 2022				
Included observations: 40 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1472.095	218.3846	6.740837	0.0000
D(PROD)	0.211733	0.041936	5.048931	0.0000
D(COMM)	-0.018155	0.102495	-0.177135	0.8607
D(SERV)	0.150246	0.045934	-3.270894	0.0029
D(OTHR)	0.065798	0.020238	3.251272	0.0031
ECM(-1)	-0.628531	0.128137	4.905130	0.0000
R-squared	0.934430	Mean dependent var		390731.4
Adjusted R-squared	0.924716	S.D. dependent var		210260.4
S.E. of regression	57690.92	Akaike info criterion		24.90619
Sum squared resid	8.99E+10	Schwarz criterion		25.13521
Log likelihood	-393.4990	Hannan-Quinn criter.		24.98210
F-statistic	96.19413	Durbin-Watson stat		1.886998
Prob(F-statistic)	0.000000			

Source: Author's Computation using E-views 10 software

The ECM results shown in table 4.5 above reveal that the explanatory variables jointly account for approximately 93.44 percentage changes in the level of Real Gross Domestic Products, criterion variable. The Durbin-Watson statistics (1.88) shows no presence of auto correlation. The estimation results show that the predictor variables Banking Systems' Credit to the Production Sector of the economy (PROD), Service sector (SERV), and "Others" sector (OTHR) are all significant in explaining changes in Real Gross Domestic Production (RGDP). However, the credit extended to General commerce sector (COMM) is not significant in explaining changes in Real Gross Domestic Product.

Specifically, the probability estimates of the relationship between Banking Systems' Credit to the Production Sector of the economy (PROD), Service sector (SERV), and "Others" sector (OTHR) – the independent variables and real gross domestic product (RGDP), the dependent variable are 0.0000, 0.0029 and 0.0031 respectively. These figures are less than 0.05 level of significance showing evidence of significant relationship between each of the predictor variables and the criterion variable. On the other hand, the probability estimates of the relationship between credit extended to General commerce sector (COMM) and real gross domestic product (RGDP) is 0.8607. The probability estimate is greater than our preferred level of significance, (0.05) indicating an insignificant relationship.

Again, and as expected, there is a positive relationship between Banking Systems' Credit to the Production Sector of the economy (PROD), Service sector (SERV), "Others" sector (OTHR) and Real Gross Domestic Production (RGDP). The implication is that as the level of credits extended to these sectors of the economy increases, the Real Gross Domestic Product also increases thereby resulting to a boost in the aggregate output of the economy. The credit to the General commerce not only is insignificantly related the Real Gross Domestic Product (RGDP), it is also negatively related to it. The absolute value of the ECM is 62.85 percent, showing that 62.85 percent of distortion in the long run have been corrected. It is statistically significant at 0.05 level. The goodness-of-fit of the estimated model indicates that the model is reasonably accurate in prediction. However, it is important to note that there are other factors at micro level and some other factors (such as literacy level, political situation etc. which may have impact on commercial banks financial intermediation process especially in less developed countries.

Presentation of Granger Causality Tests.

The results of Granger Causality tests are presented below in table 4.6;

Table 4.6: Results of Granger causality Tests:

Pairwise Granger Causality Tests			
Date: 10/04/24 Time: 19:00			
Sample: 1981 2022			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
D(PROD) does not Granger Cause D(RGDP)	39	3.36594	0.0464
D(RGDP) does not Granger Cause D(PROD)		3.72380	0.0345
D(COMM) does not Granger Cause D(RGDP)	39	1.28987	0.2884
D(RGDP) does not Granger Cause D(COMM)		1.11970	0.3381
D(SERV) does not Granger Cause D(RGDP)	39	0.68767	0.5096
D(RGDP) does not Granger Cause D(SERV)		1.90377	0.1646
D(OTHR) does not Granger Cause D(RGDP)	39	0.09409	0.9104
D(RGDP) does not Granger Cause D(OTHR)		0.61213	0.5481

The Granger causality estimation test result on the direction of causality shows that there exists a significant bi-directional relationship between Banking Systems' Credit to the Production Sector of the economy (PROD) and Real Gross Domestic Production (RGDP).

Discussion of Findings

Banks in any economy constitute the centre-pin of the modern financial system. They are the major facilitators of the financial flows and the primary custodian of liquidity in any market economy. Their dominant position in the Nigerian

economy becomes more evident when one considers their size, structure, and volume of credits they grant to the different economic units at play in the system. This study therefore, aims at ascertaining the role of banks in economic growth in Nigeria between the period of 1981 and 2022. From the study, we found out that intermediation role of Nigerian Deposit Money Banks was highly significant in enhancing growth of the economy. In other words, banks in the country lived up to expectation in that the amount of loans/advances extended to the economic units is significantly related to the level of economic growth as represented by the Real Gross Domestic Product (RGDP). This is explained by high coefficient of determination of 0.934430 signifying that about 93.44% of variation in the Real Gross Domestic Product is explained by the level of Credits extended by the Deposit Money Banks during the period under review. The positive relationship shown by positive coefficient also signifies that the higher the amount of credits extended by the Deposit Money Banks, the higher the level of Real Gross Domestic Product (RGDP) in the period under study. This is corroborated by the findings of Kurotamunobaraomi and Giami (2024).

Specifically, Banks' credit to production sector is seen to have positive relationship with real gross domestic product. This indicates that production firms properly utilize the credit advanced to them by deposit money banks. It further shows that productive activities are enhanced by the injection of credit from the deposit money banks to production firms in Nigeria. This is consonance to the conclusion of Okechuku and Asuqwo (2021) who found positive relationship between banks' credit to manufacturing sector and growth of Nigeria's economy.

Conclusion

A major policy thrust of interest rate reform was a boost on domestic savings and a consequent increase in and availability of loanable funds in the banking system. The ultimate goal is to ensure that funds are available to the productive sector of the economy to ensure a sustained economic growth and development. The paper examined the impact of Banks' intermediation role on economic growth in Nigeria from 1981 to 2022. It empirically examined the impact of sector-by-sector base credit allocation of the banking system on the overall economic growth in Nigeria. The study shows a significant relationship between banking systems' credit allocation to the production, service and "others" sectors and Real Gross Domestic Product (RGDP). We therefore conclude that Banks contributed immensely to the growth of the Nigerian economy during the period under review.

However, it imperative that we point out that this has not translated into increased living standard, as incidence of poverty and underdevelopment in Nigeria is still unacceptably high. This is explained by the fact that most commercial banks' credits are not channeled to productive sectors of the economy like industrial, manufacturing and agricultural sectors. Most of the loans are extended to borrowers for debt settlement, speculative activities in the financial markets etc thereby stifling available funds and denying the productive sectors the needed funds for sustainable economic development.

Recommendations

Following the discussion and conclusion above, we therefore make the following recommendations;

- Banks should be encouraged to lend more to the productive sector (real sector), especially to the preferred agricultural and manufacturing sectors of the economy as they have the capacity to generate employment and drive the economy to sustainable economic growth and development.
- The monetary authority should engage in a constant reappraisal of the regulations and policies that will continue to encourage credit extension to the productive sectors of the Nigerian economy. This will further ensure sustainable growth and development of the country.
- Banking habit should be improved among Nigerians. This could be achieved through massive enlightenment campaign to educate the public. This will help to further boost the deposit mobilization function of the Nigerian banks.
- The monetary authority should pursue partial deregulation of the interest rates, where there is concessionary interest rate for genuine entrepreneurs in the economy. This will ensure investment-friendly environment and also guarantee profitability to genuine investors.

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Mgbataogu, I. S. (PhD), Omire C. C.

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