



# Commercial Bank Lending and Economic Growth—The Nigerian Experience (1970-2013)

**Joseph Olusegun Ajibola**

Department of Economics, Banking and Finance, Babcock Business School, Babcock University, Ilishan-Remo, Nigeria

Email: [joeoluajibola@yahoo.co.uk](mailto:joeoluajibola@yahoo.co.uk)

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## Abstract

This paper examines the effects of commercial bank lending on economic growth in Nigeria for the period 1970-2013, using the rise in non-oil GDP as a measure of economic growth. The theoretical underpinning of the role of commercial bank lending in economic growth is based on the combination of the quantity theory of money and aggregate production function. To determine the relationship between the two variables, therefore, a preliminary co-integration analysis (unit root test) was carried out on the variables at levels. Also, the relative rates of changes were statistically determined for the variables and multiple regressions were carried out for the variables with the basic regression model defined as  $Y_t = a_1 + a_2Lr + a_3Br + a_4Br_{-1} + e_1$ . The study showed an increasing importance of commercial bank lending to economic growth in Nigeria, more so that commercial banks accounted for over 60% of total loans provided by the banking system for the period. The linear regression model (OLS) revealed a positive correlation between economic growth and commercial bank loans for one year lagged period showing some slowness in the transmission mechanism between the financial and the real sectors of the economy. The overall results therefore conform to our a priori expectation that bank credit generally is an enabler for economic growth, although at a fairly sluggish pace.

## Keywords

Economic Growth, Non-Oil GDP, Commercial Bank, Bank Credit

**Subject Areas:** Business Analysis, Economics, Financial Reporting

## 1. Introduction

Bank Lending plays a vital role in propelling economic growth. Commercial banks therefore serve as key agents

of economic growth and development. An effective, efficient and disciplined banking system brings about rapid growth in the various sectors of the economy as attested to by Melanie [1]. However, the role of Nigerian banks in promoting growth and development remains contentious because of the perceived failure of commercial banks to provide the needed credit to galvanise the real sectors of the economy.

Available studies on this area have devoted much emphasis to the nexus between aggregate credit and GDP. This paper deviates from this pattern in three major ways:

- Emphasis is on non-oil GDP.
- Only a proxy for capital, bank credit, is adopted.
- The scope of this study is limited to commercial banks credit as opposed to credit of other financial institutions. This is hinged on the belief that most Nigerians source their business credit from commercial banks rather than other financial institutions Soyibo [2].

## 2. Literature Review

Commercial banks the world over are established to mobilise and channel financial resources into appropriate areas of need for economic growth and national development. UN 1977 [3].

In Keynesian postulation, an increase (decrease) in investment or expenditure (private or government) gives rise to multiple increase (decrease) in output, a measure of economic growth.

Kuznets [4] defines economic growth of a nation as:

*A long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands.*

He summarised the features of modern economic growth in terms of inter-sectoral structural shifts whereby there will be a shift from agricultural to non-agricultural activities, a shift from industry to services; a shift away from small family and personal enterprises to the impersonal organisation of large-scale national and transnational productive units. All these shifts, he maintained, are associated with high and sustained rates of growth of per capita product and of productivity per worker. This indicated that the productive efforts in the various sectors were meant to bring about economic growth. These productive efforts have to be financed. Agreeing with this position, some others advised any nation wishing to achieve significant economic growth to allocate effort and capital to do four basic things: increase the quantity of reproducible goods, improve the quality of reproducible goods, improve the quality of the people as productive agents, and raise the level of productive arts.

In like manner, Lewis [5] held the view that the effort to economize, the increase of knowledge or its application in production, and increasing the amount of capital or other resources per head would bring about economic growth. One can then conceptualize economic growth ( $G$ ) as a function of available natural resources ( $R$ ), capital accumulation ( $K$ ), technical progress ( $T$ ), the rate of entrepreneurial development ( $E$ ) and social capability ( $S$ ). The study of any of these variables or set of variables can help to explain economic growth.

To this extent, this work is designed to assess the effect of capital accumulation on economic growth of Nigeria through commercial banks credit. Commercial banks' credit as mentioned earlier may be used for consumption or investment expenditures, which are functions of capital formation. So, this study is basically an investment approach to economic growth as opposed to the output approach, which aims at measuring aggregate output growth using the contribution of total factor productivity (TFP). This is informed by recent findings, which showed that the major reason for the sustained increasing trend in economic growth is due to incremental capital-output ratio (ICOR). Ohkawa [6], Kuznets [7], Abramovitz [8]. In the various studies, there was the recognition that the contribution of conventional inputs (e.g. capital " $K$ " and labour " $L$ ") to growth can be studied through the "secondary effects". Also, the role of bank credit in sustaining capital investment and financial intermediation was emphasized by Soyibo and Adekanye [9], and Adlnan and Morris [10].

The controversial issue in economic literature is the link between the real and financial sectors of the economy. Following from this is the debate over the relationship between the financial system and economic growth in general and between commercial bank lending and economic growth in particular. This research is intended to contribute to the limited empirical studies in this area by ascertaining the causal relationship between commercial bank lending and economic growth in Nigeria. It is pertinent therefore to attempt to answer the following research questions: What is the impact of commercial banks' credit on economic growth in Nigeria?

### **Financial Institutions and Economic Growth:**

Financial institutions contribute significantly to economic growth and development. In the words of Porter [11]:

*The visible correlations in the world (between financial and real development) are indeed commanding—whether one relates the development of the nation’s financial system (however measured) to its per capita income across countries at a moment of time or across time for a particular country, the relationship between real and monetary variables are undeniable.*

This assertion found support in Levine’s [12], Mckennon [13] and Shaw [14]. They all emphasized two factors as essential for growth and development, namely availability of entrepreneurs and financial institutions.

Majority of empirical studies support a positive contribution of financial sector to economic growth and development. These include among others the confirmed positive impact of banking reform on Malaysia’s economic growth. Jalilian Kirkpatrick [15] and Kunbhaka and Maurotas [16] reaffirmed the deepening effect the financial sector had on economic growth of developing nations.

The role of micro finance banks, plethora of financial products and availability of credit products to all sectors was emphasized by Thoma [17] as great influencer of economic growth and that an underdeveloped credit market contributed to continued poverty, higher income inequality and slow economic growth. According to Somoye and Ilo [18], loan growth has positive correlation with GDP growth. This was corroborated by the subsequent findings that in the US, period of economic prosperity leads to high demand for lending with good business profitability.

The relevance of commercial banks in the economy therefore leans heavily on its intermediating role—providing financial backing for the execution of profitable ideas. Without a virile banking system, the costs of finding counterparty and of reducing information asymmetry become so high that eventually few loans are made. The consequence is non-implementation of profitable ideas and stagnation of the overall economy Wright [19].

The findings of various researchers on the role of bank lending in propelling growth in developed countries of America and developing countries of Malaysia and Nigeria lend credence to the earlier postulation of a strong positive correlation between bank lending and economic growth.

### **3. Theoretical Framework in the Study of Economic Growth**

The theoretical development in the study of economic growth is hinged on a number of approaches that have been adopted over the ages. The first approach follows the neo-classical growth theories. These are exemplified in general equilibrium theory of Walras [20], Solow [21], and others. In recent times, this approach has also borrowed from the works of Harrod [22]. The second is the post-keynesian approach. This derives primarily from the works of Keynes [23] and others. The works of Harrod [24] provide the initial stimulus for the rebirth of interest in growth theory and those of Robinson [25]; Kahn [26] represents Post-Keynesian theories. The remarkable characteristics of the neo-classical growth analysis are the dynamic and the long-run nature of study tools whereas the Post-Keynesian analysis is devoted to the short-run tools, stationary states and fixed coefficients.

#### **Neo-Classical Growth Model: The Simple Malleable Capital Model:**

The malleable capital model of the neo-classical as seen in the works of Solow [27] and others, assume factor substitution along a production function in reworking Harrod’s fundamental relation for growth. Solow’s model is briefly presented below:

The technological possibilities can be represented by a standard production function:

$$Y = f(K, L) \quad (2.4)$$

where

$Y$  = Output: the only one commodity of the system.

$K$  = Capital.

$L$  = Labour.

#### **The Case of Cobb-Douglas Function:**

The Cobb-Douglas function can be represented as:

$$Y = K^a L^{1-a} \quad (2.12)$$

Or

$$Y = K^a L^b$$

where  $Y =$  Output

$K =$  Capital.

$b = (1-a)$ .

$a$  and  $(1-a)$  are elasticities.

Recent researches and empirical works in the last two decades have given rise to some growth analysis referred to as endogenous growth models. This new growth theory was developed in the 1980s as a response to criticism of the neo-classical growth model. The endogenous growth theory holds that policy measures can have an impact on the long run growth rate of an economy. The models show that growth is better generated endogenously as against the neo-classical's exposition of exogenously generated growth. Growth can be explained through constant return to scale production function (the AK Model) or some more complicated set ups with spillover effects, increasing number of goods, etc.

The models can be seen in the works of Levine [28]. These models represent reactions to the failures of the neo-classical model which Barro and Sala-I-Martin [29], termed "conditional convergence" model.

## 4. Methodology

### 4.1. The Model Specification

The production function of the Cobb-Douglas form is adopted with some modification based on recent empirical studies.

The adopted Cobb-Douglas function is:

$$Y_{(t)} = A_{(t)} L_{(t)}^\alpha K_{(t)}^\beta \quad (3.1)$$

where

$Y =$  output.

$A_{(t)} =$  rate of technical progress.

$L =$  Labour.

$K =$  The capital.

$t =$  time and;

$\alpha$  and  $\beta$  are elasticities of output with respect to factors.

To put Equation (3.1) in an estimate form the natural log form is taken:

$$L_{(n)} Y_{(t)} = L_n A_{(t)} + \alpha L_n L_{(t)} + \beta L_n K_{(t)} \quad (3.2)$$

Let the relative rates of change of the variables obtained in Equation (3.4)-(3.7) be represented as  $Y_r$ ,  $A_r$ ,  $L_r$ , and  $K_r$  and then substituted into Equation (3.2) to obtain:

$$Y_r = A_r + \alpha L_r + \beta K_r \quad (3.8)$$

Equation (3.8) can be written as:

$$Y_r = A_r + \alpha L_r + \beta K_r + e, \quad A_r, \alpha, \beta, > 0 \quad (3.9)$$

where

$Y_r =$  relative rate of growth of output.

$A_r =$  rate of technical progress.

$\alpha =$  elasticity of output with respect to labour.

$\beta =$  elasticity of output with respect to capital.

$L_r =$  relative growth rate of labour.

$K_r =$  relative growth rate of capital.

$e$  = error term

Although the conditions of constant returns to scale (if  $\alpha + \beta = 1$ ) was assumed in equation (3.1) and hence holds for Equation (3.8), we further assume that increasing returns to scale (if  $\alpha + \beta > 1$ ) and decreasing returns to scale (if  $\alpha + \beta < 1$ ) could also hold for the model represented by the equation (3.8). This is to enable equation (3.8) accommodate the Nigeriareal life situation where  $(\alpha + \beta)$  may not necessarily be equal to one. There is a very high tendency for the sum of the output elasticities  $(\alpha + \beta)$  in Nigeria to be less than 1.

## 4.2. Model for the Economy

With slight modification of equation (3.9), the model for this study is stated as follows:

$$Y_r = \alpha_1 + \alpha_2 L_r + \alpha_3 B_r + \alpha_4 B_{r-1} + e_1$$

where;

$Y_r$  = relative growth rate of output.

$\alpha_1 = A_r$  = rate of technical progress.

$L_r$  = elasticity of output with respect to labour.

$\alpha_3$  = elasticity of output with respect to capital (represented by commercial banks' credit).

$L_r$  = relative growth rate of labour.

$B_r$  = the relative growth rate of commercial banks' credit which is taken as a proxy for capital.

$$\frac{B_{(t)}^1}{B_{(t)}} = B_r.$$

$B_{r-1}$  = one lag of the growth rate of Commercial banks' credit.

$\alpha_4$  = elasticity of output with respect to one lag of the growth in Commercial banks' credit.

$e_1$  = error term.

In the above equation, bank credit (implying commercial bank loans and advances) is used as a proxy for capital. The equation suggests that the growth in output is a function of growth in labour, current bank credit and previous bank credit of one lagged period.

It is to be noted that the model as specified in the above equation is exclusive of many other variables, which may affect economic growth, as earlier indicated. Some of the excluded variables are natural resources ( $R$ ) components such as climatic conditions *i.e.* drought, the rate of Entrepreneurial Development ( $E$ ) and Social capability ( $S$ ), which will include availability of foreign reserve, credit from other sources or political instability of the nation concerned. It is not always possible to include all influential explanatory variables in a given model due to innumerable circumstances.

Recent developments in econometric time-series analysis suggest that co-integration tests be carried out on the variables so as to avoid spurious regression results.

Co-integration tests procedures are available in literature in the works of prominent economists, which include Engel and Granger [30] and others. In this study the co-integration test proposed by Engel and Granger which is widely accepted among economic scholars, is adopted. It consists of two steps.

- a) Stationarity test on variables of the model.
- b) Co-integration test using the non-stationary variables of the model.

## 5. The Data and Regression Results

The respective data used in this paper are as culled from the publications of the most authoritative sources in Nigeria: Central Bank of Nigeria [31]-[41], Nigerian Deposit Insurance Corporation [42] and National Bureau of Statistics.

From the various publications, non-oil GDP at 1970 constant factor rose from N3748 m in 1970 to N33518 m in 1980 and N171685 in 1990, N2783226 m in 2000, N19423357 m in 2007 and N24628141 in 2011 respectively.

Likewise Commercial Bank credit rose from N857 m in 1970 to N9074 m in 1980, N33401 m in 1990, N1003432 m in 2000, N4813488 m in 2007 and N7312726 m 2011 respectively

The applicable figures for Labour are as culled from these sources as well.

Applying OLS as the tool of analysis, the results are as provided below:  
 Nigerian growth factors (1970-2013) regression results

Model	Equation	Methods of Estimation	Dependent Variable	Constant	Independent Variables			Goodness of Fit			Diagnostic Tests F-Version			
(a) model I [1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	R <sup>2</sup> [9]	F-Stat [10]	DW [11]	Schwarz Bayesian Criterion SBC [12]	Serial Correction [13]	Ramsey's Reset Test [14]	Heteroscedasticity [15]
Result for Economy	1.0	OLS	$Y_t$	$a_1$	$L_t$	$B_t$	$B_{t-1}$	0.0104	F(3,21) 0.7335	1.7446	-52.5387	F(1,20) 0.2640	F(1,20) 2.2004	F(1,23) 0.0096
		t-ratio		(1.7475)	(0.3541)	(-0.1099)	(0.2244)							

The results showed positive correlation between commercial bank credit of one year lag and economic growth over the period. However, the current credit did not have such immediate impact on growth showing that the loans took some time to have effect on the real sectors of the economy and translate into growth for the economy as a whole. R<sup>2</sup> and F-Statistic though positive did not confirm any overwhelming influence of bank loan on economic growth for the period. The implication of this is that there are several other variables that influence growth apart from commercial bank loans. Indeed, funding of sectoral activities in Nigeria come from a plethora of sources key among which are government capital expenditure, foreign direct investments, new equities, etc. Loans from development banks and other specialized financial institutions provide the needed financial backing to propel growth.

## 6. Summary of Findings, Recommendations and Conclusions

The outcomes of this study brought to fore some important facts about commercial banks' credit guidelines and policies. It equally sheds more light on the effects of credit aggregates on economic growth of Nigeria within the period of study.

Generally, the study showed that:

- a) Between 1970 and 2013 commercial banks were a pillar of financial support to the Nigerian economy.
- b) Commercial banks expanded credit facilities to the various sectors of the national economy including the rural areas during the period of study.
- c) More than 60 percent of commercial banks' available deposits were set aside as loanable funds from 1970 to 2013.

### 6.1. Implications of Major Findings

- 1) By implication of our research findings, commercial banks' loans and advances are a major financial backbone to the Nigerian economy at least for the period covered by this study.
- 2) The noticeable continuous deterioration of the health parameters of licensed commercial banks could be as a result of poor credit/risk management, poor loan recovery, frauds and forgeries, persistent bank robbery, insider dealings/abuse, the shareholders interference in credit policy and of course lack of political will to deal with numerous credit abuses.
- 3) To achieve meaningful economic growth, credit should be made available to the economy early enough.
- 4) The phenomenon of deteriorating health parameters of banks also revealed the policy inadequacies of individual banks to cope with credit administration since there were no sufficient existing regulations to deal with and punish the offending customers, bank officials or directors (credit abusers) directly. It is possible to put in place credit policies that could see to the direct punishment of credit abusers (customers or insiders), rather than

the current practice of declaring such loans and advances as bad debts.

## 6.2. Recommendations

Based on the above findings, the following recommendations are made.

- 1) Commercial banks should continue to provide credit facilities to the Nigerian economy.
- 2) To avoid liquidity problems, distress and sometimes bank failure, commercial banks should from time to time institute researches into their operations as a way of identifying the optimal loan-to-deposit ratio.
- 3) Individual commercial bank should put in place additional stringent punitive measures to deal with all parties to credit abuse (customers, officials, directors and even shareholders).
- 4) The government should continue to create conducive atmosphere and policies for the encouragement and improvement of commercial banks' credit policies. In particular, the government should make it a point of duty to always monitor and review the classification of credit priority areas for maximum economic growth.

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